PROJECT SCOPING DOCUMENT

SIMPLOT PLANT AREA
EASTERN MICHAUD FLATS SUPERFUND SITE

August 12, 2002

MFG, Inc.
consulting scientists and engineers

PROJECT SCOPING DOCUMENT

SIMPLOT PLANT AREA
EASTERN MICHAUD FLATS SUPERFUND SITE

August 12, 2002

Prepared for:

J. R. SIMPLOT COMPANY

P.O. Box 912
1130 West Highway 30
Pocatello, ID 83204

Prepared by:

MFG, INC.
consulting scientists and engineers

4900 Pearl East Circle, Suite 300W
Boulder, CO 80301
(303) 447-1823
Fax: (303) 447-1836

MFG Project No. 010121-0

EMCSF 5.1.1

8/12/02

MFG, Inc.
4900 Pearl East Circle
Suite 300W
Boulder, CO 80301-6118
303/447-1823
Fax: 303/447-1836

consulting
scientists and
engineers

August 12, 2002

Ms. Linda Meyer (WCM-121)
Project Manager RCRA/Superfund
U.S. EPA Region 10
1200 Sixth Avenue
Seattle, WA 98101

Subject: **Eastern Michaud Flats Superfund Site - Simplot Plant Area Project Scoping Document**

Dear Ms. Meyer:

On behalf of the J.R. Simplot Company, please find attached three copies of the Project Scoping Document for remedial design at the Simplot Plant Area at the Eastern Michaud Flats Superfund Site.

Please do not hesitate to call if you have any questions or comments.

Respectfully,
MFG, INC.

Andrew C. Koulermos
Senior Chemical Engineer

C: Doug Tanner - IDEQ Pocatello
Roger Turner - ShoBan Tribe
Ward Wolleson – J.R. Simplot Company

TABLE OF CONTENTS

LIST OF ATTACHMENTS

1.0 INTRODUCTION

This Project Scoping Document provides a summary of the general project planning meeting for remedial design at the Simplot Plant Area of the Eastern Michaud Flats (EMF) Superfund Site, located near Pocatello, Idaho. The meeting and this report are required by the Statement of Work (SOW) of the Remedial Design/Remedial Action Consent Decree between EPA and Simplot. As stated in Section IV.C.1 of the SOW:

"The settling defendant has conducted preliminary work towards the development of draft remedial design reports for each element of work. This information shall be presented to EPA at a general project planning meeting and will serve as a basis for scoping for the remedial design activities. The results of the scoping process shall be documented in a Project Scoping Document that includes a summary of the meeting with EPA and references to other existing documents used in planning the remedial design."

The planning meeting was held in Pocatello, Idaho on August 6, 2002 and was attended by representatives of the J.R. Simplot Company, the United States Environmental Protection Agency (EPA), the Idaho Department of Environmental Quality (IDEQ), and the Shoshone-Bannock Tribes. The attendance list is provided as Attachment A.

2.0 SUMMARY OF THE PROJECT PLANNING MEETING

The meeting consisted of two main components: (1) a presentation by Simplot of data and information used to support the remedial design and a discussion among all participants on the technical details; and (2) a site tour to inspect the areas where remedial activities will be performed.

In accordance with the SOW requirements, Simplot submitted the initial design documents to the Agencies on August 5, 2002. The documents were:

- East Overflow Pond Construction Completion Report;
- Pre-Final Dewatering Pit Remedial Design Report (RDR);
- Draft Gypsum Roads RDR;
- Draft Groundwater Extraction RDR;
- Pre-Final Groundwater Monitoring RDR and
- Draft Institutional Controls Program Report.

Summary information presented by Simplot at the project planning meeting contained text, figures and tables that were, for the most part, taken directly from these documents. The summary information presented at the meeting is provided as Attachment B.

3.0 DOCUMENTS USED IN PLANNING THE REMEDIAL DESIGN

The documents used in planning the remedial design are as follows:

Bechtel. 1996. *Remedial Investigation Report for the Eastern Michaud Flats Superfund Site*. Bechtel Environmental, Inc. Prepared for FMC Corporation and the J.R. Simplot Company.

Ecology and Environment Inc. 1996. *Baseline Human Health Risk Assessment. Eastern Michaud Flats Superfund Site.* Prepared for EPA.

USEPA. 1998. *Record of Decision, Declaration Decision Summary and Responsiveness Summary for Eastern Michaud Flats Superfund Site.* Pocatello, Idaho, US EPA Region 10. June 1998.

USEPA. 2002. *Consent Decree for Remedial Design/Remedial Action for the Simplot Plant Area at the Eastern Michaud Flats Superfund Site.* US EPA Region 10. May 9 2002.

Additional information and data used were:

- Semi-annual groundwater monitoring data from the RI monitoring period to the present (included as Appendix C to the Groundwater Extraction RDR).
- Subsurface investigations and short-term groundwater pumping tests performed in 1996 (provided as Appendix A-1 to the Groundwater Extraction RDR).
- Extended pumping tests of extraction test wells performed from the fall of 1997 to the spring of 1998 (provided as Appendix A-2 to the Groundwater Extraction RDR).
- Supplemental drilling and well installation activities performed between 1996 and 1998 (provided as Appendix A-3 to the Groundwater Extraction RDR).
- Gypsum stack gamma radiation exposure characterization evaluation project performed in 1998 (provided as Appendix A to the Gamma Radiation Exposure Monitoring/Mitigation Plan for Gypsum Stack Workers; a component of the Institutional Controls program).

APPENDICES

APPENDIX A

APPENDIX A

Meeting Attendance List

Subject _____ Project No. _____

By _____ Checked By _____ Task No. _____

File No. _____

Date _____ Date _____ Sheet _____ of _____

PROJECT SCOPING MEETING
AUGUST 6, 2002

SIGN-IN SHEET

NAME	ORGANIZATION	PHONE
LEON PRUETT	JRS - Don Plant	(208) 234-5370
Ward Wolfson	Simplot Corp.	(208) 389 7558
Doug Frick	MFG	425-921-4000
Andy Koulermos	MFG	303 447 - 1823
DAN PASTOR	MFG	"
Dale Reavis	JRS	(208) 234-5476
Roger Turner	Sho-BAN	208 478-3905
Sue SKinner	EPA - Pocatello	(208) 478-1680
Linda MEYER	EPA	(206) 553-6636
Joe Baldwin	DEQ - Boise	(208) 373-0248
Ed Greutert	EPA Contractor	(206) 386-4793
Rick Kuhlthau	ASE/EPA Contractor	(703) 876-6287
Lynn Von Every	DEQ - Pocatello	(208) 236-6160
Doug Tanner	DEQ - Pocatello	(208) 236-6160

APPENDIX B

APPENDIX B

Summary Information Provided by Simplot at the Meeting

Project Scoping Meeting
Simplot Plant Area Remedial Design
Eastern Michaud Flats Superfund Site

August 6, 2002

Summary

The Remedial Design/Remedial Action Consent Decree for the Simplot Plant Area portion of the Site was finalized on May 9, 2002.

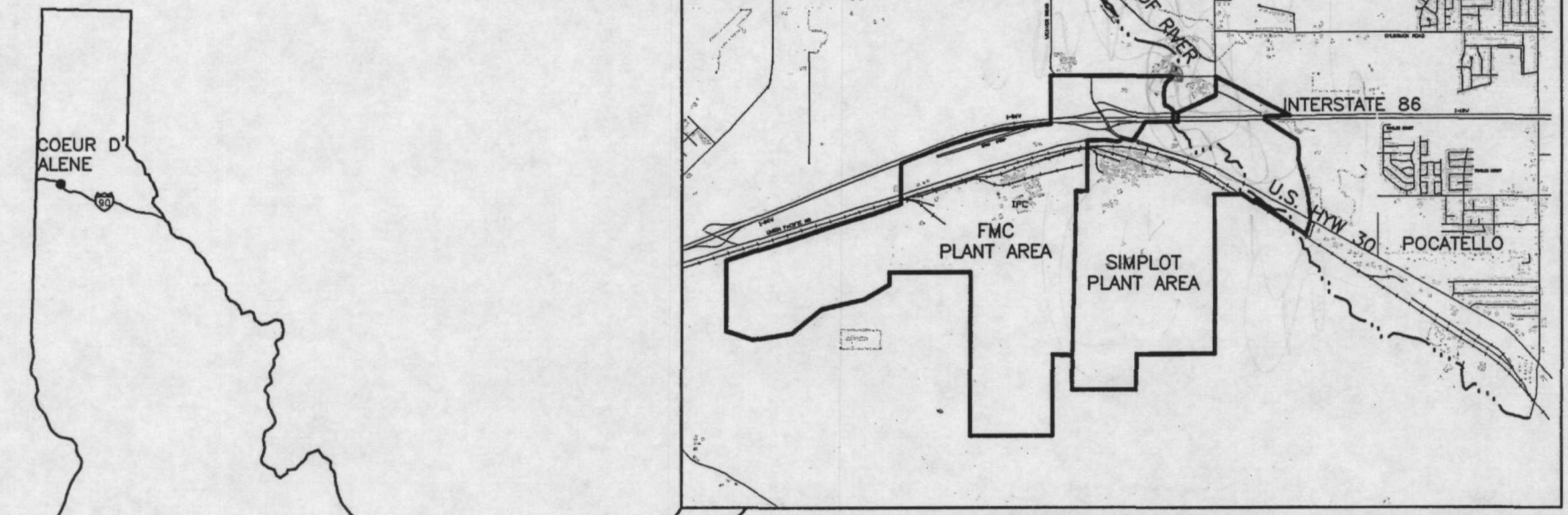
The Consent Decree Statement of Work (SOW) addressed the following work elements for remediation:

- Groundwater Extraction
- Dewatering Pit
- Gypsum Stack Roads
- Former East Overflow Pond
- Groundwater Monitoring
- Simplot Plant Area Institutional Controls

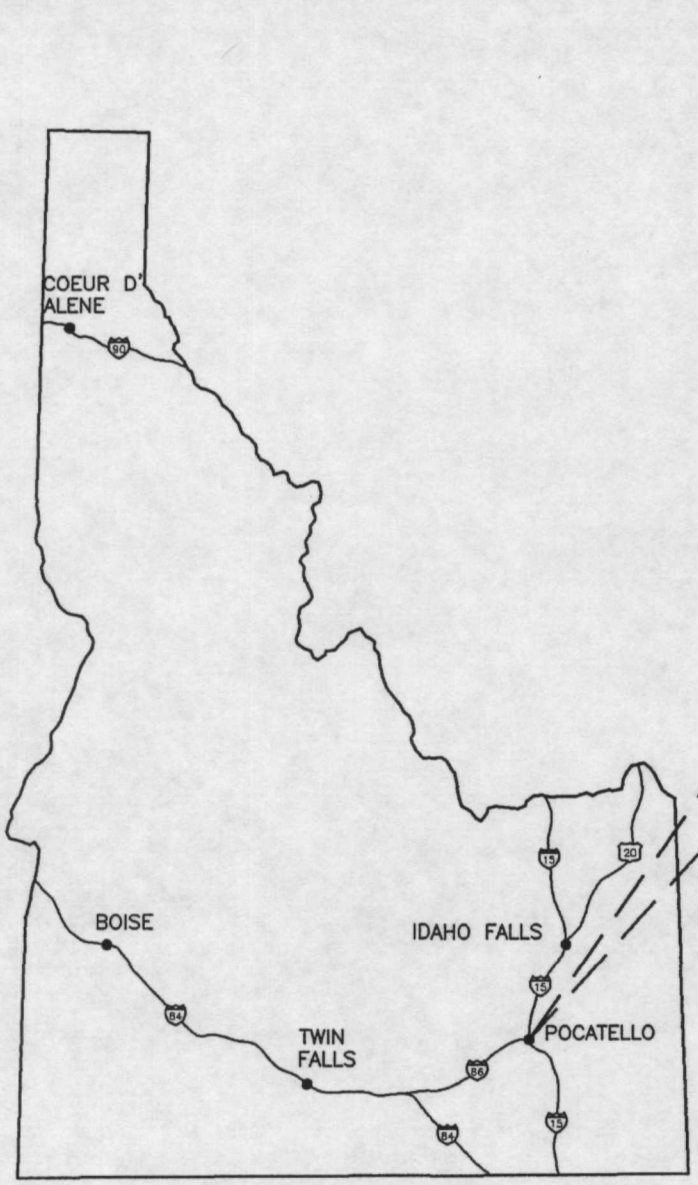
Remedial design and construction completion reports have been submitted (delivery date was August 5, 2002).

The following pages provide a summary of each element of work.

4/02 BY: RHF



EASTERN MICHAUD FLATS
SUPERFUND SITE VICINITY



IDAHO

SIMPLOT PLANT AREA **EASTERN MICHAUD FLATS** **SUPERFUND SITE** POCATELLO, IDAHO
GROUNDWATER EXTRACTION REMEDIAL DESIGN REPORT
FIGURE 1 **SITE LOCATION MAP**
PROJECT: 010121.1 | DATE: JULY 2002
REV: | BY: RHF | CHECKED: AC
MFG, Inc. *consulting scientists and engineers*

RFIELD D:\0121\0121-4.dwg ???? 5/22/02 12:57 pm
Xrefs: [none]
Images: [none]
Plot time: 1:41 pm
Plot date: 5/22/02

APPENDIX B.1

Groundwater Extraction

Groundwater Extraction

Overview of Don Plant Process

- The Don Plant produces phosphoric acid and a variety of liquid and solid fertilizers. Plant production began in 1944 with a single superphosphate fertilizer and has grown to 12 principal products, including five grades of solid fertilizer and four grades of liquid fertilizer.

- Principal raw materials are phosphate ore (transported from the Smoky Canyon Mine by slurry pipeline, since 1991), sulfur and ammonia.

- In the process, the phosphate ore is digested with sulfuric acid to produce phosphoric acid. The phosphoric acid is a product and is also used to generate other fertilizer products.

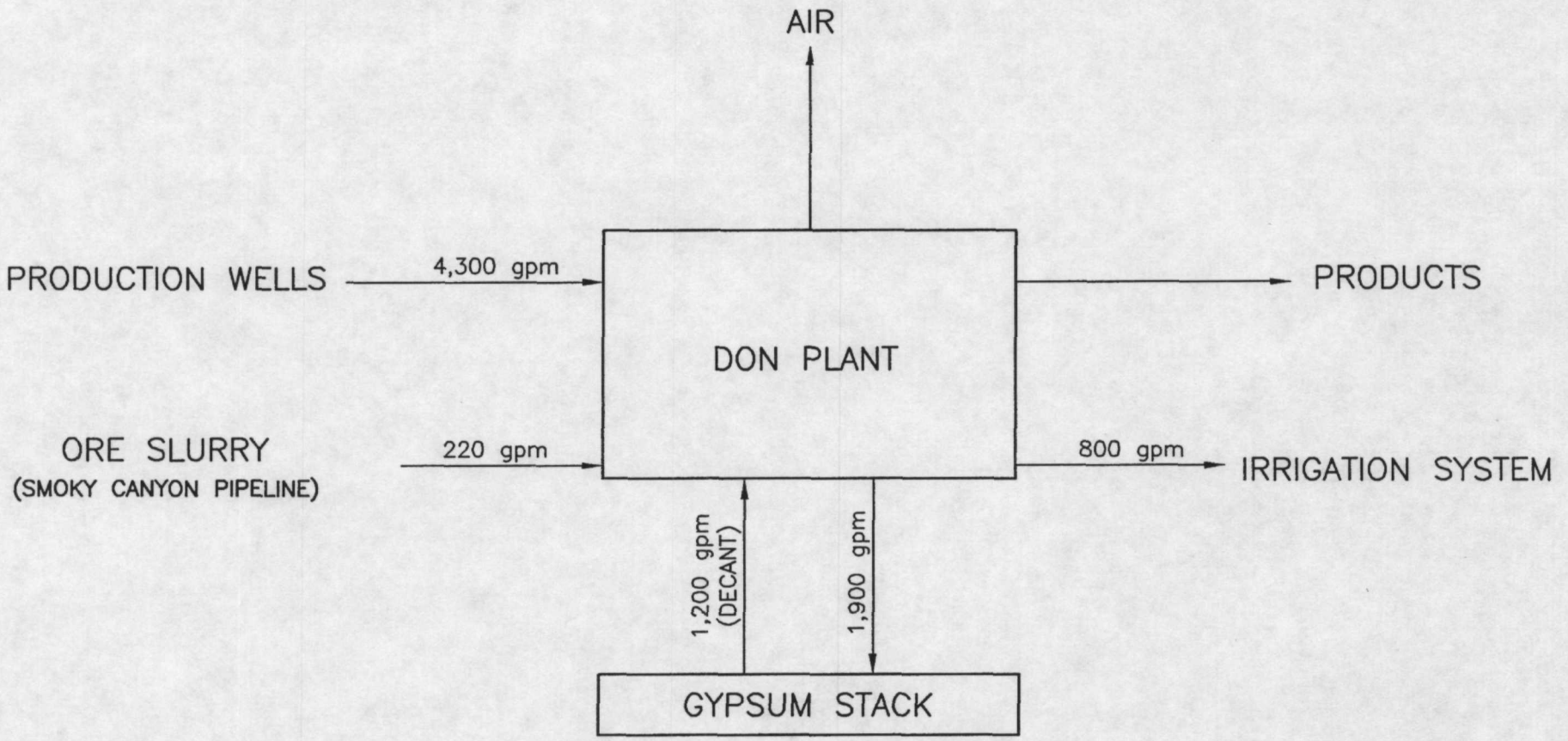
- The main byproduct of ore digestion is gypsum (calcium phosphate). The gypsum is pumped in slurry form to the gypsum stack.

- A generalized water balance for the plant is as follows (see attached figure):

  Inputs
  - 3 production wells (4,300 gpm)
  - Ore Slurry (220 gpm)
  - Return from gypsum stack (1,200 gpm)

  Outputs
  - Slurry to gypsum stack (1,900 gpm)
  - Irrigation water (800 gpm)
  - Emissions to air
  - Water in products

6/02 BY:SCG



NOTE:

1. FLOWS ARE APPROXIMATE AND MAY CHANGE IN THE FUTURE.

SIMPLOT PLANT AREA
EASTERN MICHAUD FLATS
SUPERFUND SITE
POCATELLO, IDAHO

GROUNDWATER EXTRACTION REMEDIAL DESIGN REPORT

FIGURE 3

DON PLANT
WATER BALANCE SCHEMATIC

PROJECT: 010121.2	DATE: JUNE 2002	
REV:	BY: SCG	CHECKED: DEP

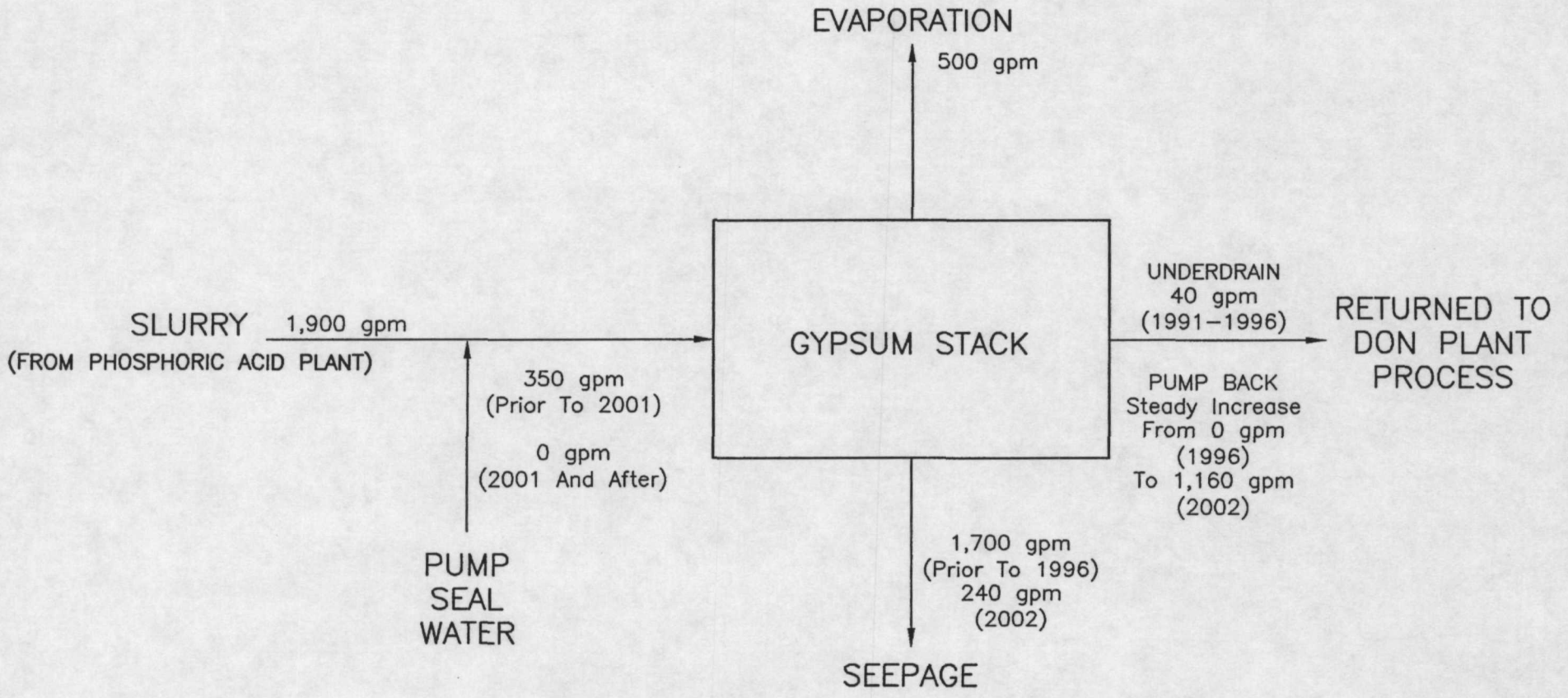
MFG, Inc.
consulting scientists and engineers

RFIELD D:\0121\0121-20.dwg 010121.2 7/23/02 3:10 pm
Xrefs: [none]
Images: [none]
Plot time: 3:10 pm
Plot date: 7/23/02

OVERVIEW OF GYPSTACK OPERATIONS

- The stack has three separate cells:
  - Lower stack
  - Eastern cell on upper stack
  - Western cell on upper stack
- During the Remedial Investigation (RI) only the upper stack was in use. The lower stack was returned to service around 1994 when Simplot implemented a new, ditch-rimming method of operating the stack.
- Previously slurry was applied to the two upper cells on an annual cycle. With the ditch-rimming method slurry is now applied to each of the cells on a rotating six-week schedule.
- Water sent to the stack is:
  - Collected and returned to the Don Plant
  - Evaporates
  - Seeps to groundwater
- Operational changes have decreased the total seepage to groundwater through
  - Ditch-rimming
  - Process changes due to pipeline ore delivery produce gypsum with lower permeability
  - Changes in way slurry pump seals are operated
- Seepage has reduced such that the area of ponded water has increased from 10-15 acres to about 200 acres.
- Simplot currently has to pump water from the ponded areas back from the Don plant at a rate of 1,160 gpm. Prior to 1996 no water was pumped back.
- Prior to 1996, seepage to groundwater was estimated at 1,700 gpm. Since 1996 seepage has decreased and is currently estimated at around 250 gpm (see figure).

6/02 BY:SCG



NOTE:

1. THE FLOWS SHOWN FOR SLURRY, PUMP SEAL WATER, AND RETURNED TO DON PLANT PROCESS ARE RELATIVELY ACCURATE (BASED ON MEASUREMENTS, PUMP CAPACITIES, ETC). THE FLOWS FOR EVAPORATION AND SEEPAGE ARE ESTIMATES.

SIMPLOT PLANT AREA
EASTERN MICHAUD FLATS
SUPERFUND SITE
POCATELLO, IDAHO

GROUNDWATER EXTRACTION REMEDIAL DESIGN REPORT

FIGURE 4

GYPSUM STACK WATER BALANCE SCHEMATIC

PROJECT: 010121.2	DATE: JUNE 2002	
REV:	BY: SCG	CHECKED: DEP

MFG, Inc.
consulting scientists and engineers

RPFELD D:\0121\0121-21.dwg 010121.2 7/23/02 3:07 pm
Xrefs: [none]
Images: [none]
Plot time: 3:07 pm
Plot date: 7/23/02

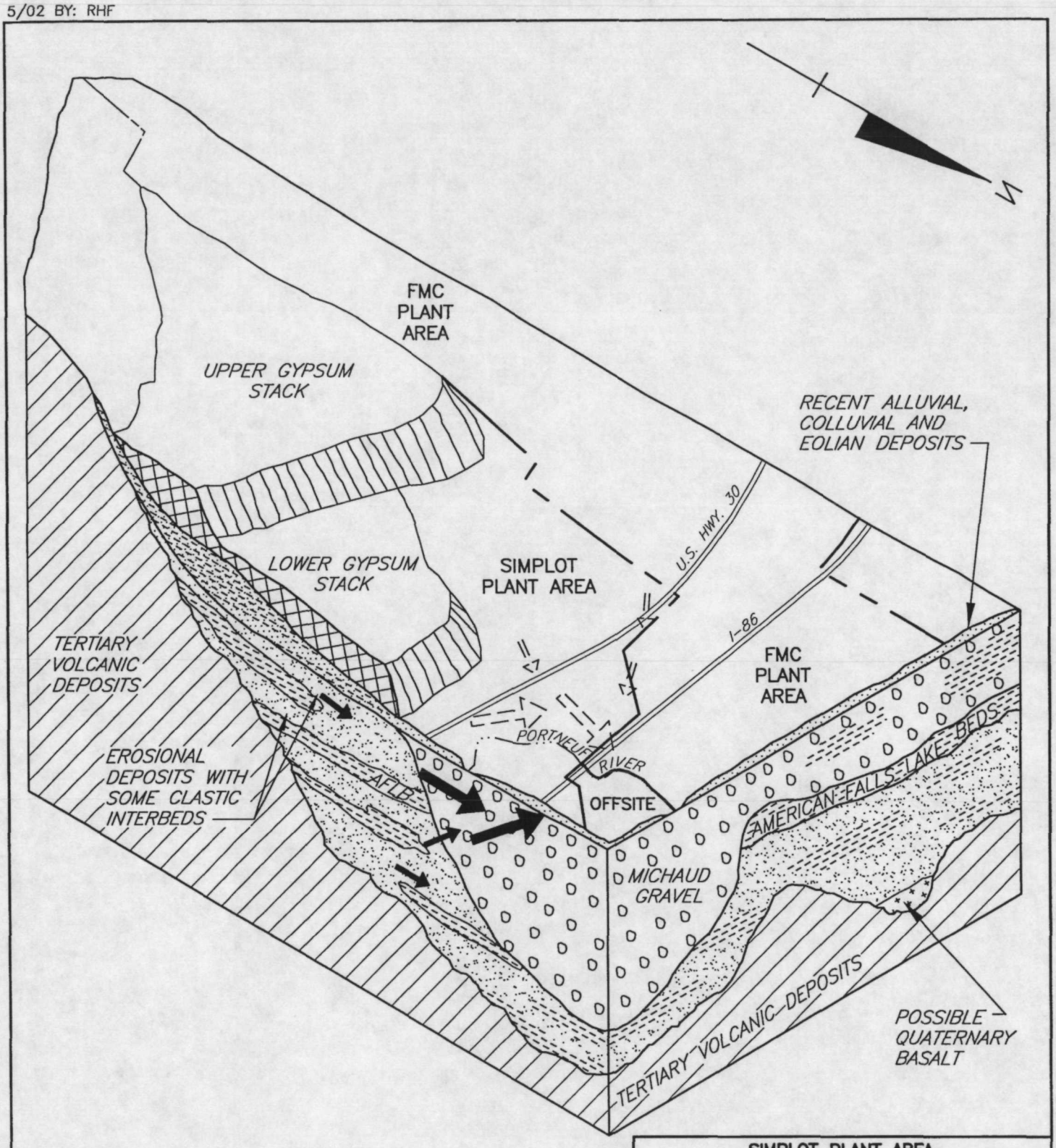
Site Hydrogeologic Setting

- Site is divided into two hydrogeologic zones (see figures):

  Bannock Range (beneath Stack)
  - Volcanic bedrock with interbeds of sand and gravel from erosion of bedrock in upgradient areas
  - No distinct aquifer zones, but groundwater occurs in alluvial channels and interbeds
  - A bedrock ridge directs the groundwater toward the east and west
  - West side groundwater follows a buried relect channel filled with alluvial (gravel) material to the west side of the Don Plant
  - East side groundwater is not confined to a drainage channel and covers a wider area flowing to the east side of the Don Plant.

  Michaud Flats (Beneath Don Plant and North)
  - Snake River Plain basalts overlain by volcanic gravel. Above the gravels are fine-grained materials known as American Falls Lake Beds (AFLB).
  - The AFLB serves as a confining layer that separates the Michaud Flats unit beneath the Don Plant into an upper zone and a lower zone.
  - North of the Don Plant the AFLB confining layer is absent and has been replaced by the coarse-grained Michaud Gravels (gravels, cobbles and boulders).
  - Modeling from the RI showed that the plant production wells capture a significant portion of the confined lower zone groundwater.
  - Lower zone groundwater not captured flows up into the upper zone, mixes with shallow groundwater and the larger flux of groundwater from the Michaud Gravels and migrates north to springs along the Portneuf River.

5/02 BY: RHF



LEGEND:

GENERAL GROUNDWATER FLOW DIRECTIONS

SIMPLOT PLANT AREA
EASTERN MICHAUD FLATS
SUPERFUND SITE
POCATELLO, IDAHO

GROUNDWATER EXTRACTION REMEDIAL DESIGN REPORT

FIGURE 5

GEOLOGIC BLOCK DIAGRAM

PROJECT: 010121.1	DATE: JULY 2002
REV:	BY: RHF CHECKED: AC

MFG, Inc.
consulting scientists and engineers

RFIELD D:\0121\0121-1.dwg ???? 5/22/02 2:04 pm
Xrefs: (none)
Images: (none)
Plot time: 2:04 pm
Plot date: 5/22/02

LEGEND:

N

- SHALLOW MONITORING WELL
- DEEP MONITORING WELL
- WATER SUPPLY WELL
- PRODUCTION WELL
- ABANDONED SHALLOW MONITORING WELL
- ABANDONED DEEP MONITORING WELL
- ABANDONED PRODUCTION WELL
- SPRING

—4300— CONTOUR LINE DENOTING TOP OF VOLCANIC ROCK

4323 ELEVATION OF TOP OF VOLCANIC ROCK INTERPRETED FROM DRILLING LOG

<4267 VOLCANIC ROCK WAS NOT ENCOUNTERED, NUMBER REPRESENTS BASE OF BORING.

TANK_FARM
ROWLANDS
BATISTE SPRING
OLD_PILOT
NEW_PILOT
FRONTIER
PORTNEUF RIVER
LINDLEY
WILLIAMSEN
IDAHO_POWER
FMC PLANT AREA
SIMPLOT PLANT AREA

TW-9S 4397
TW-10S <4363
TW-11S
TW-11I 4307
TW-12S
TW-2S
TW-2I
TW-2D 4243
TW-3S
TW-3D 4240
TW-4S
TW-4I
TW-4D 4342
TW-5S
TW-5I
TW-5D 4215
TW-7S 4385
TW-8S 4375
SWP-4 <4198
SWP-5 <4217
SWP-6 4231
SWP-7
FMCP-1 4323
FMCP-2 4321
FMCP-3 4276
FMCP-4 <4358
FMCP-5 4296
PEI-1
PEI-2
PEI-3 <4353
PEI-4
PEI-5
PEI-6
S003 4448
S004 4495
S005 <4387

SCALE
1000 0 1000 FEET

SIMPLOT PLANT AREA
EASTERN MICHAUD FLATS
SUPERFUND SITE
POCATELLO, IDAHO

GROUNDWATER EXTRACTION REMEDIAL DESIGN REPORT

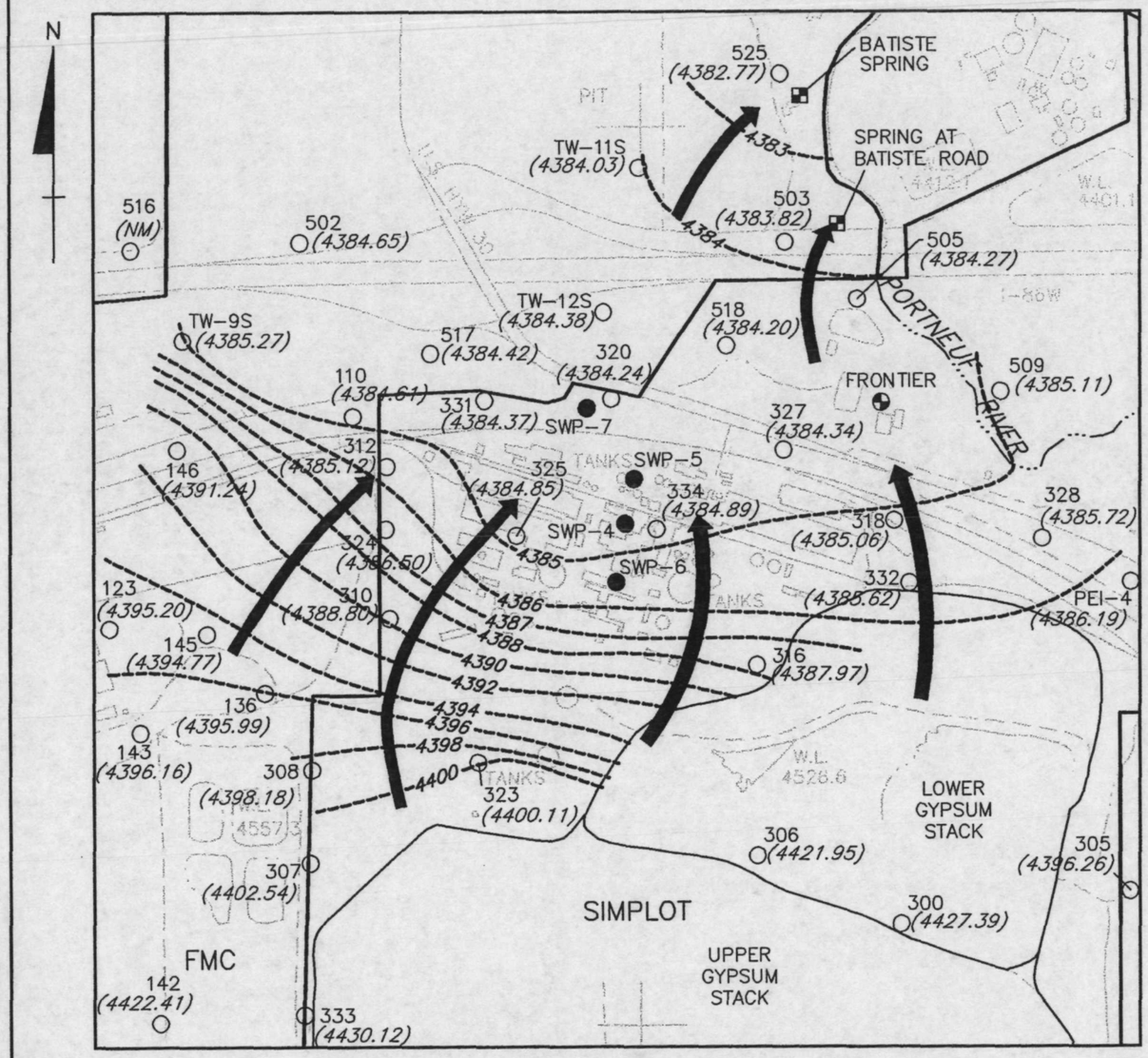
FIGURE 6

ELEVATION CONTOUR MAP OF VOLCANIC BEDROCK SURFACE

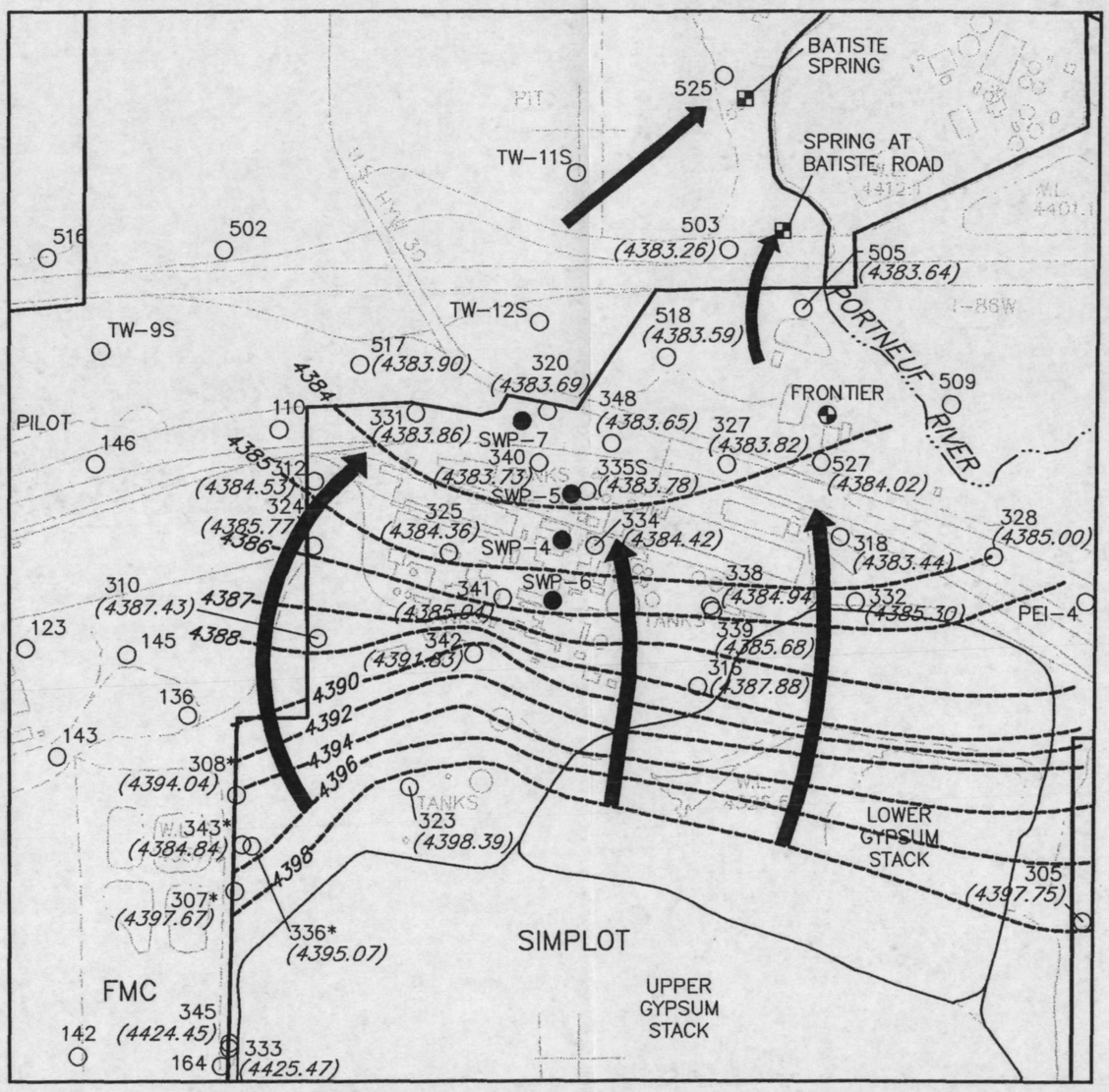
PROJECT: 010121.1	DATE: JULY 2002
REV:	BY: RHF CHECKED: AC

MFG, Inc.
consulting scientists and engineers

RFIELD D:\0121\0121-8.dwg 010121.2 5/30/02 4:21 pm
Plot time: 5/30/02 4:21 pm
Plot date: 5/30/02



UPPER ZONE POTENTIOMETRIC SURFACE 1995



UPPER ZONE POTENTIOMETRIC SURFACE 2001

LEGEND:

- 346 ○ — GROUNDWATER MONITORING WELL LOCATION AND DESIGNATION
- (4397.67) — WATER LEVEL ELEVATION MEASURED NOVEMBER 1995 AND AUGUST 2001 (ft MSL)
- ➡ — GENERAL DIRECTION OF GROUNDWATER FLOW
- 4388 ----- — LINE OF EQUAL WATER LEVEL ELEVATION (CONTOUR INTERVAL VARIABLE)
- FRONTIER ◔ — WATER SUPPLY WELL LOCATION AND DESIGNATION
- SWP-5 ● — PRODUCTION WELL LOCATION AND DESIGNATION
- BATISTE SPRING ■ — NATURAL SPRING

NOTE:

*—WATER LEVEL AFFECTED BY PUMPING AT WELL 343.

SCALE

800 0 800 FEET

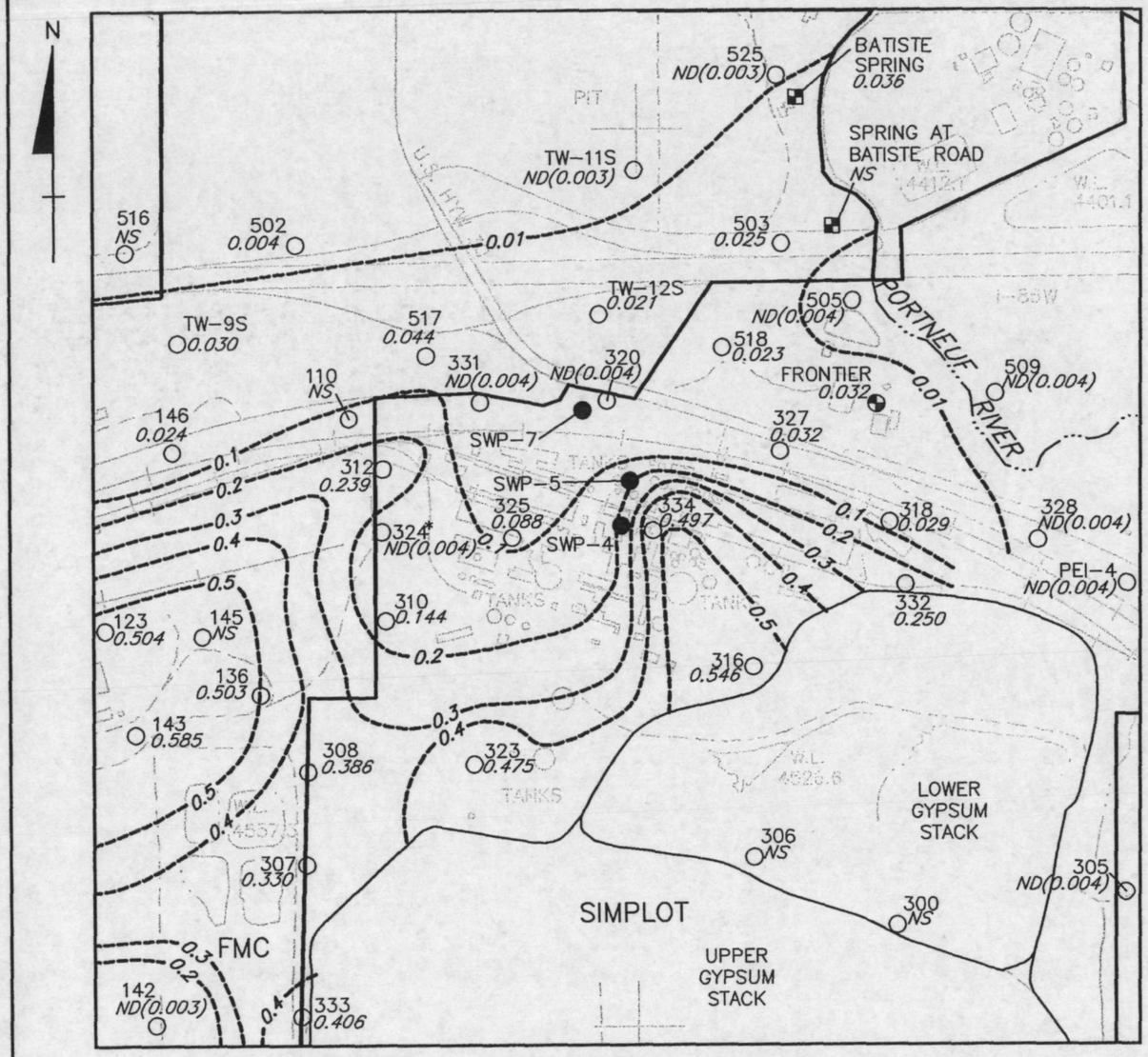
SIMPLOT PLANT AREA
EASTERN MICHAUD FLATS SUPERFUND SITE
POCATELLO, IDAHO

GROUNDWATER EXTRACTION REMEDIAL DESIGN REPORT

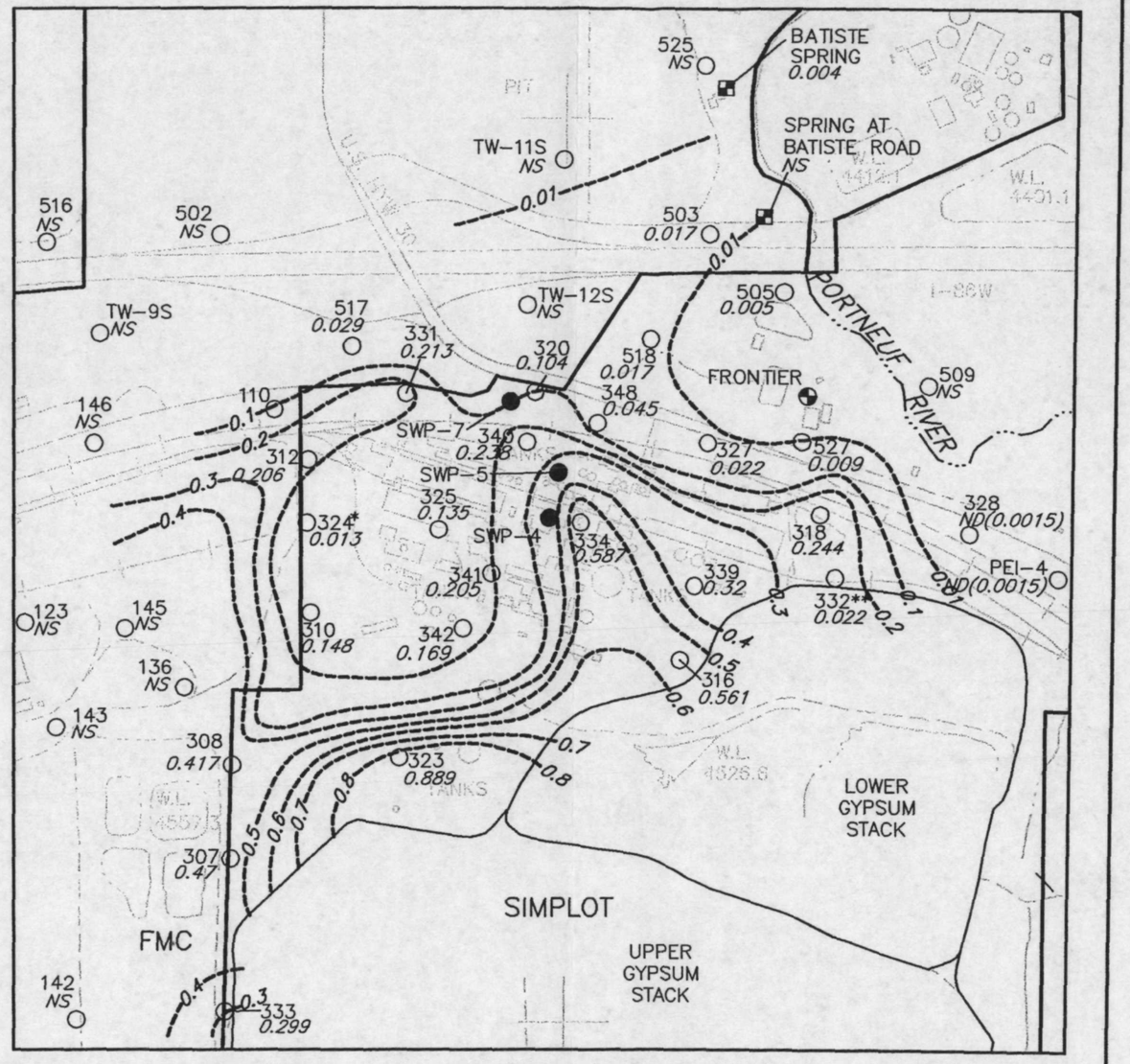
FIGURE 7
UPPER ZONE POTENTIOMETRIC SURFACE AND GROUNDWATER FLOW DIRECTION MAPS (1995/2001)

PROJECT: 010121.2	DATE: MAY 2002
REV:	BY: SCG CHECKED: DEP

MFG, Inc.
consulting scientists and engineers



ARSENIC ISOCONCENTRATION LINES 1995



ARSENIC ISOCONCENTRATION LINES 2001

LEGEND:

346 ○	GROUNDWATER MONITORING WELL LOCATION AND DESIGNATION
0.497	CONCENTRATION IN Mg/L
ND(0.040)	ANALYTE NOT DETECTED AT A CONCENTRATION ABOVE THE VALUE INDICATED IN THE PARENTHESIS
0.2	ISOCONCENTRATION LINE (CONTOUR INTERVAL VARIABLE)
FRONTIER ⊕	WATER SUPPLY WELL LOCATION AND DESIGNATION
SWP-5 ●	PRODUCTION WELL LOCATION AND DESIGNATION
BATISTE SPRING ■	NATURAL SPRING

NOTE:

*—WELL 324 NOT CONSIDERED IN DEVELOPING CONTOURS AS THIS WELL'S SCREEN EXTENDS INTO THE LOWER ZONE.

**—UNUSUALLY LOW CONCENTRATIONS WERE REPORTED FOR WELL 332 IN AUGUST 2001. ISOCONCENTRATION CONTOURS REFLECT TYPICAL VALUES.

SCALE

800 0 800 FEET

SIMPLOT PLANT AREA
EASTERN MICHAUD FLATS SUPERFUND SITE
POCATELLO, IDAHO

GROUNDWATER EXTRACTION REMEDIAL DESIGN REPORT

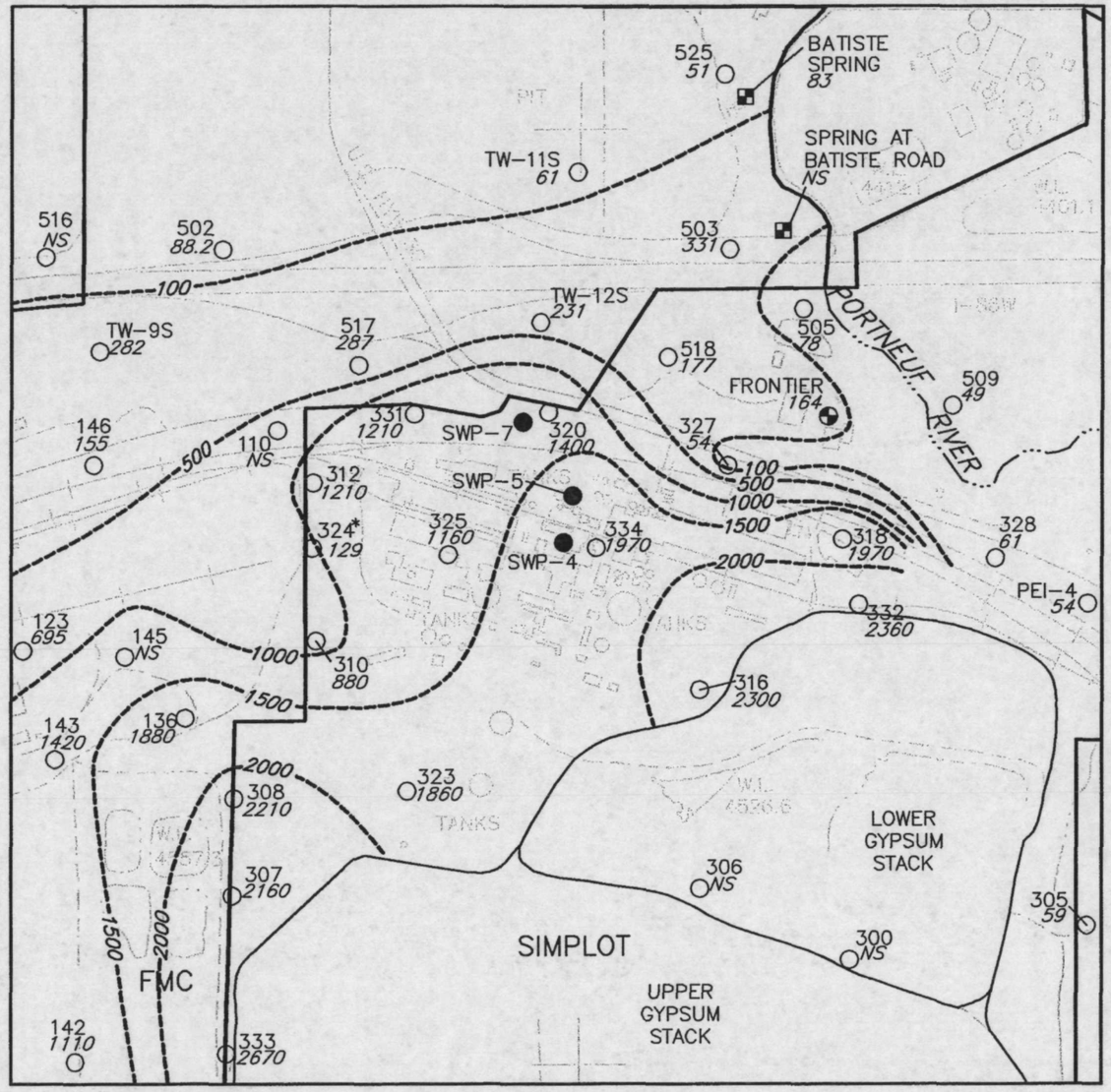
FIGURE 9

UPPER ZONE ARSENIC ISOCONCENTRATION MAPS (1995/2001)

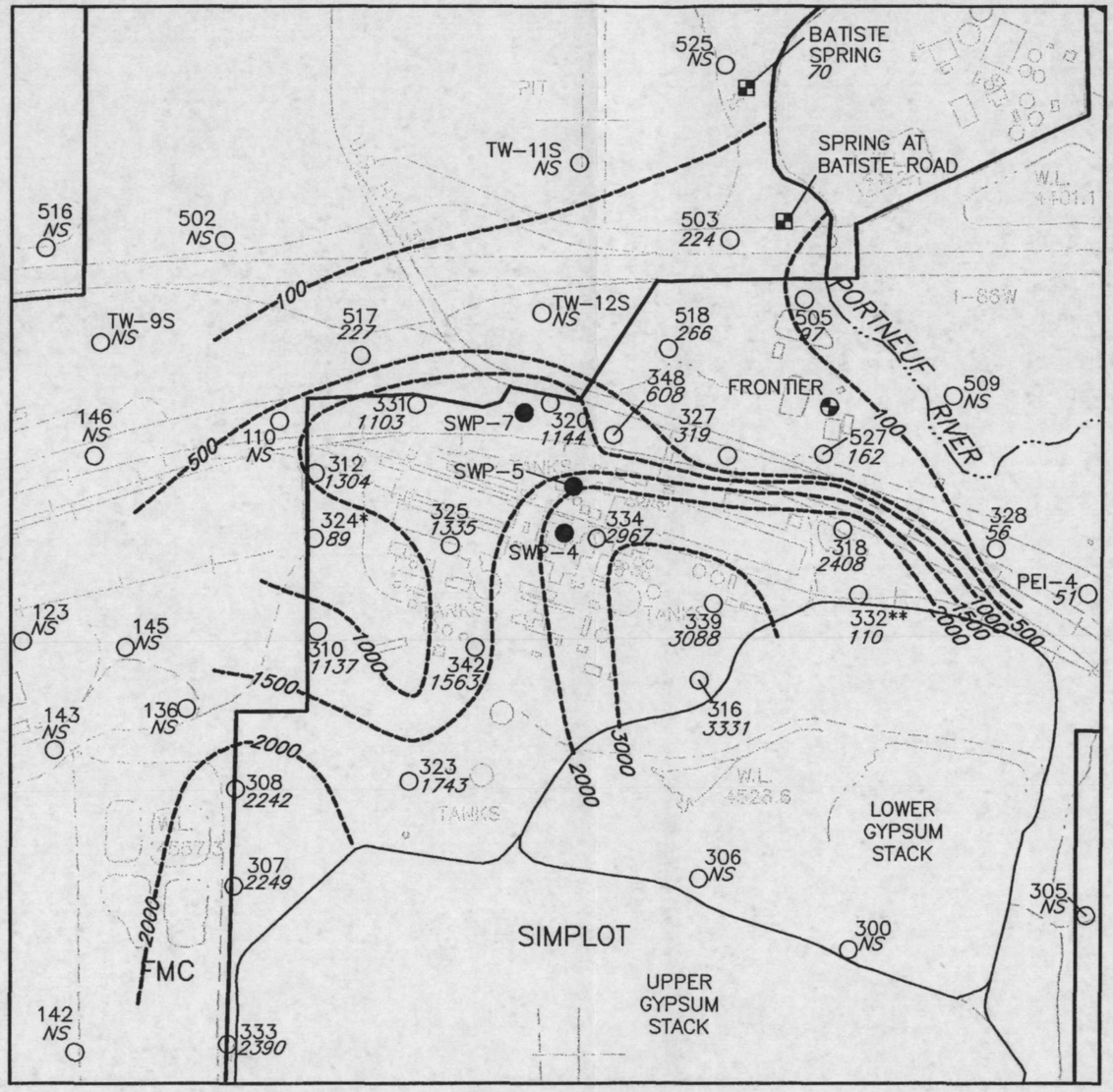
PROJECT: 010121.2	DATE: MAY 2002
REV:	BY: RHF CHECKED: DEP

MFG, Inc.
consulting scientists and engineers

RFIELD D:\010121\010121-13.dwg 010121.2 7/23/02 3:36 pm
Xrefs: [none]
Images: [none]
Plot time: 3:36 PM
Plot date: 7/23/02



SULFATE ISOCONCENTRATION LINES 1995



SULFATE ISOCONCENTRATION LINES 2001

LEGEND:

346 ○	GROUNDWATER MONITORING WELL LOCATION AND DESIGNATION
2967	CONCENTRATION IN mg/L
500 ----	ISOCONCENTRATION LINE (CONTOUR INTERVAL VARIABLE)
FRONTIER ⊕	WATER SUPPLY WELL LOCATION AND DESIGNATION
SWP-5 ●	PRODUCTION WELL LOCATION AND DESIGNATION
BATISTE SPRING ■	NATURAL SPRING

NOTE:

*—WELL 324 NOT CONSIDERED IN DEVELOPING CONTOURS AS THIS WELL'S SCREEN EXTENDS INTO THE LOWER ZONE.

**—UNUSUALLY LOW CONCENTRATIONS WERE REPORTED FOR WELL 332 IN AUGUST 2001. ISOCONCENTRATION CONTOURS REFLECT TYPICAL VALUES.

SCALE

800 0 800 FEET

SIMPLOT PLANT AREA
EASTERN MICHAUD FLATS
SUPERFUND SITE
POCATELLO, IDAHO

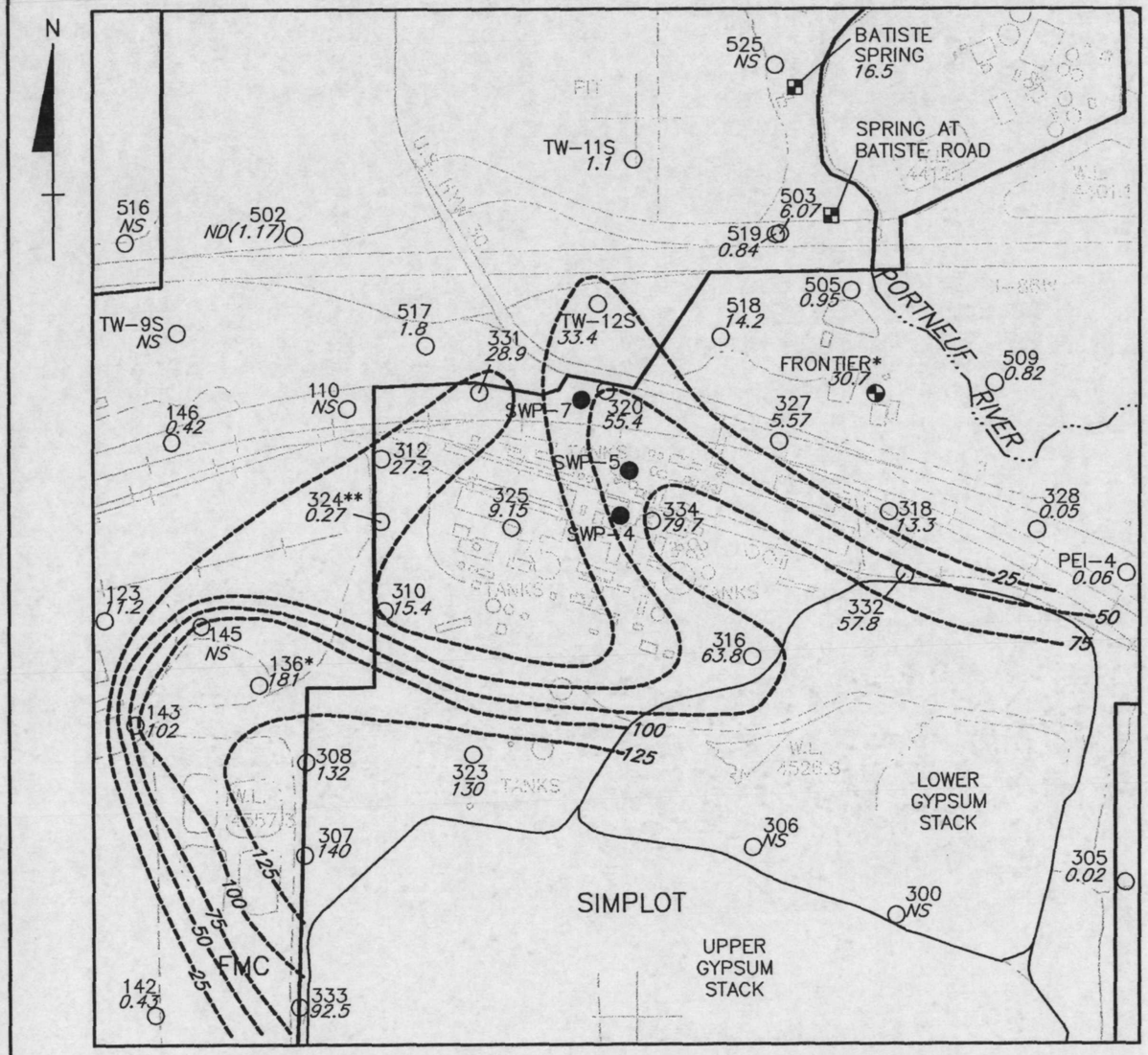
GROUNDWATER EXTRACTION REMEDIAL DESIGN REPORT

FIGURE 10
UPPER ZONE SULFATE ISOCONCENTRATION MAPS (1995/2001)

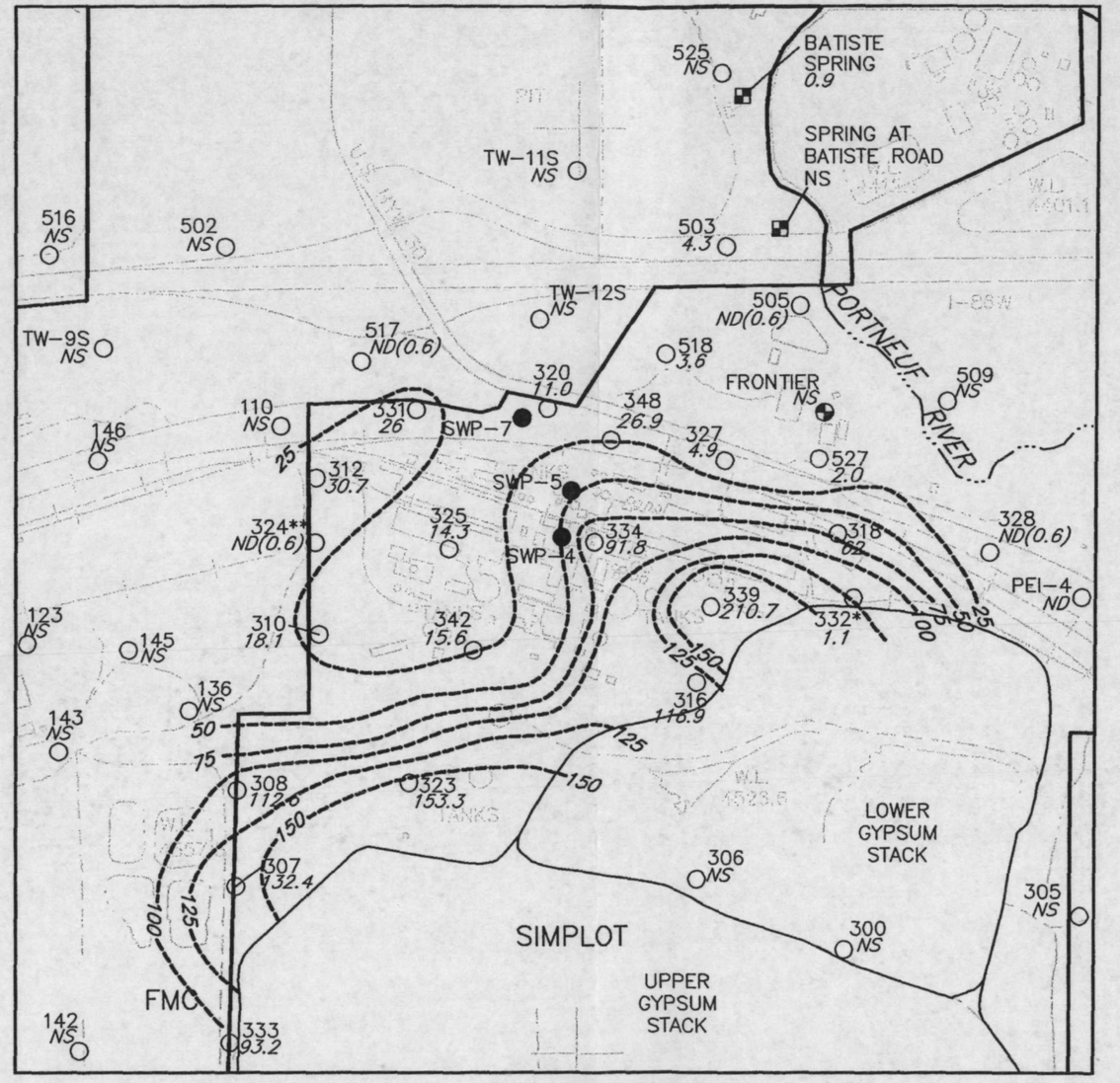
PROJECT: 010121.2	DATE: MAY 2002
REV:	BY: RHF CHECKED: DEP

MFG, Inc.
consulting scientists and engineers

RFIELD G:\2121\2121-14.dwg 010121.2 7/23/02 3:28 pm
Xrefs: [none]
Images: [none]
Plot time: 3:28 pm
Plot date: 7/23/02



ORTHOPHOSPHATE ISOCONCENTRATION LINES 1995



ORTHOPHOSPHATE ISOCONCENTRATION LINES 2001

LEGEND:

346 ○	GROUNDWATER MONITORING WELL LOCATION AND DESIGNATION
0.43	CONCENTRATION IN mg/L
ND(0.1)	ANALYTE NOT DETECTED AT A CONCENTRATION ABOVE THE VALUE INDICATED IN THE PARENTHESIS
75 ----	ISOCONCENTRATION LINE (CONTOUR INTERVAL VARIABLE)
FRONTIER ⊕	WATER SUPPLY WELL LOCATION AND DESIGNATION
SWP-5 ●	PRODUCTION WELL LOCATION AND DESIGNATION
BATISTE SPRING ■	NATURAL SPRING

NOTE:

*UNUSUALLY HIGH ORTHOPHOSPHATE CONCENTRATIONS WERE MEASURED IN WELLS 136 AND FRONTIER IN DECEMBER 1995, AND UNUSUALLY LOW CONCENTRATIONS WERE MEASURED IN WELL 332 IN AUGUST 2001. ISOCONCENTRATION CONTOURS SHOWN REFLECT TYPICAL VALUES.

**WELL 324 NOT CONSIDERED IN DEVELOPING CONTOUR AS THIS WELL'S SCREEN EXTENDS INTO LOWER ZONE.

SCALE

800 0 800 FEET

SIMPLOT PLANT AREA
EASTERN MICHAUD FLATS
SUPERFUND SITE
POCATELLO, IDAHO

GROUNDWATER EXTRACTION REMEDIAL DESIGN REPORT

FIGURE 11

UPPER ZONE ORTHOPHOSPHATE ISOCONCENTRATION MAPS (1995/2001)

PROJECT: 010121.2	DATE: MAY 2002
REV:	BY: RHF CHECKED: DEP

MFG, Inc.
consulting scientists and engineers

Distribution of Constituent in Groundwater

An exhaustive investigation of the site environmental conditions was performed during the RI phase of the project from 1992 to 1994. This investigation included quarterly sampling of groundwater from 77 wells, and these samples were typically analyzed for 22 heavy metals, 4 radionuclides and other analytes.

After the RI period, Simplot continued to perform groundwater monitoring in the Simplot Plant Area and at Batiste Spring on a semi-annual basis.

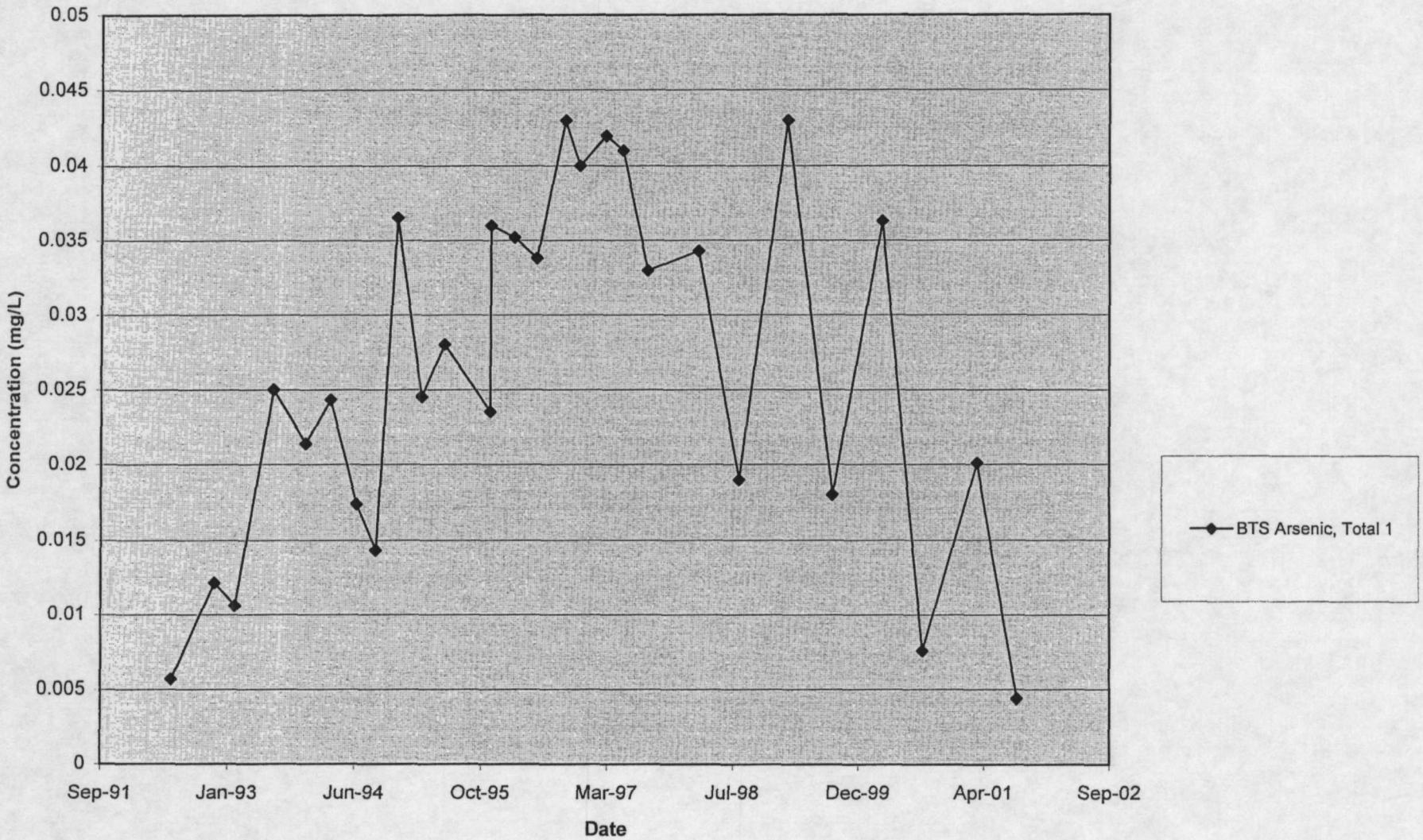
In the Simplot Plant Area, the gypsum stack and the East Overflow pond were identified as sources of constituents to groundwater. The gypsum stack was found to have affected groundwater quality over a relatively large area while the East Overflow Pond (an unlined pond used for collection of process water during plant upsets) had a more localized effect (primarily in the area of paired wells 317 and 318), but resulted in higher constituent concentrations in groundwater. Use of the East Overflow Pond was discontinued in 1993 and the pond was replaced with a new, lined impoundment.

Groundwater from beneath the gypsum stack flows along the east and west sides of a buried volcanic ridge and into the Don Plant Area. Beneath and immediately downgradient of the Don Plant, mixing of upper and lower groundwater with the larger flux of groundwater from the Michaud Gravels reduces the constituent concentrations, prior to discharge to the Portneuf River.

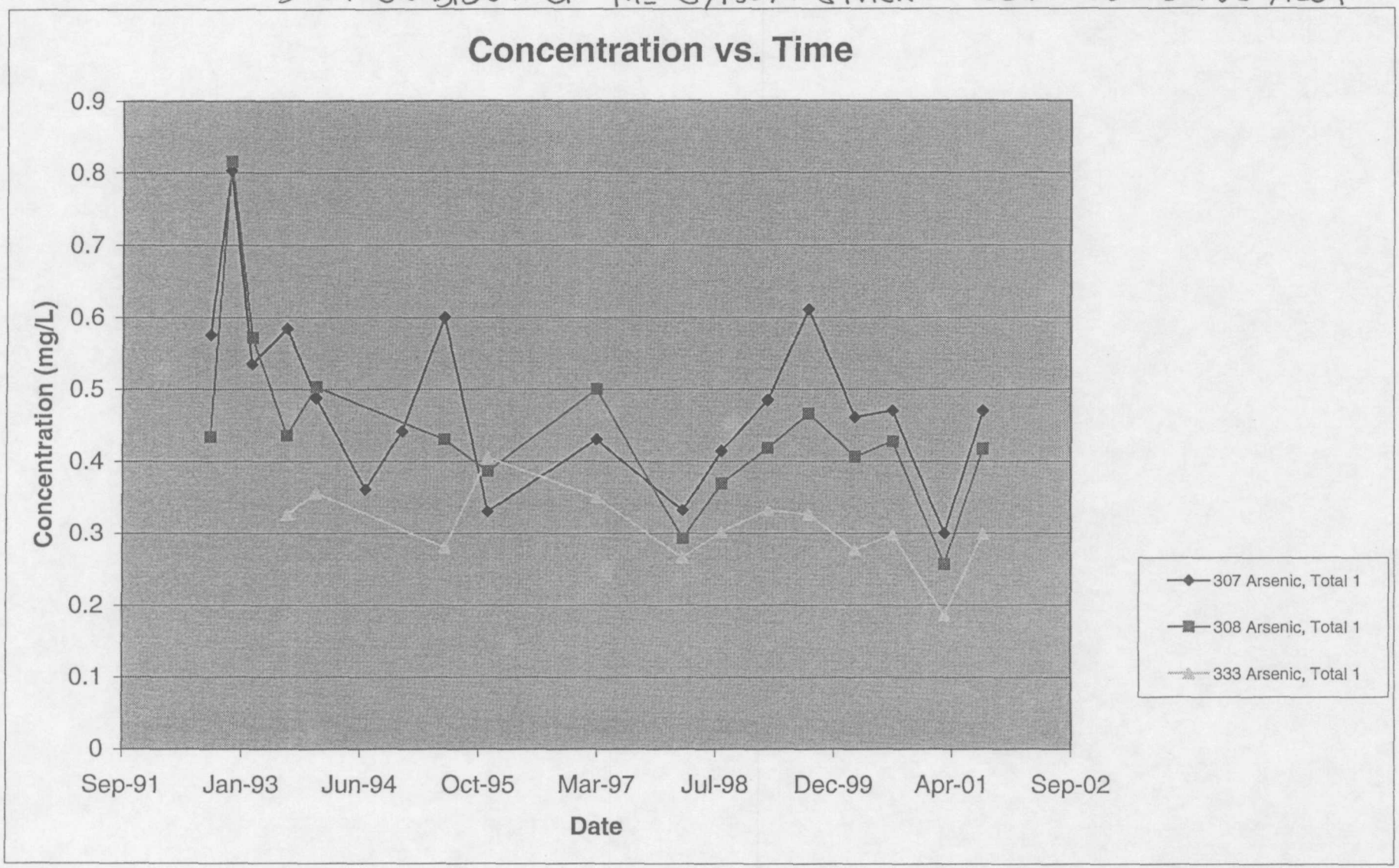
Historically, groundwater discharged at Batiste Spring, to the north of the Simplot Plant Area, has met water quality standards (primarily Maximum Contaminant Levels (MCLs)) for arsenic. However, in February 2002, the arsenic MCL was lowered from 0.05 mg/L to 0.01 mg/L which is approximately equal to the background value of 0.018 mg/L. By comparison, arsenic concentrations at Batiste Spring are typically lower than 0.05 mg/L but greater than 0.01 mg/L.

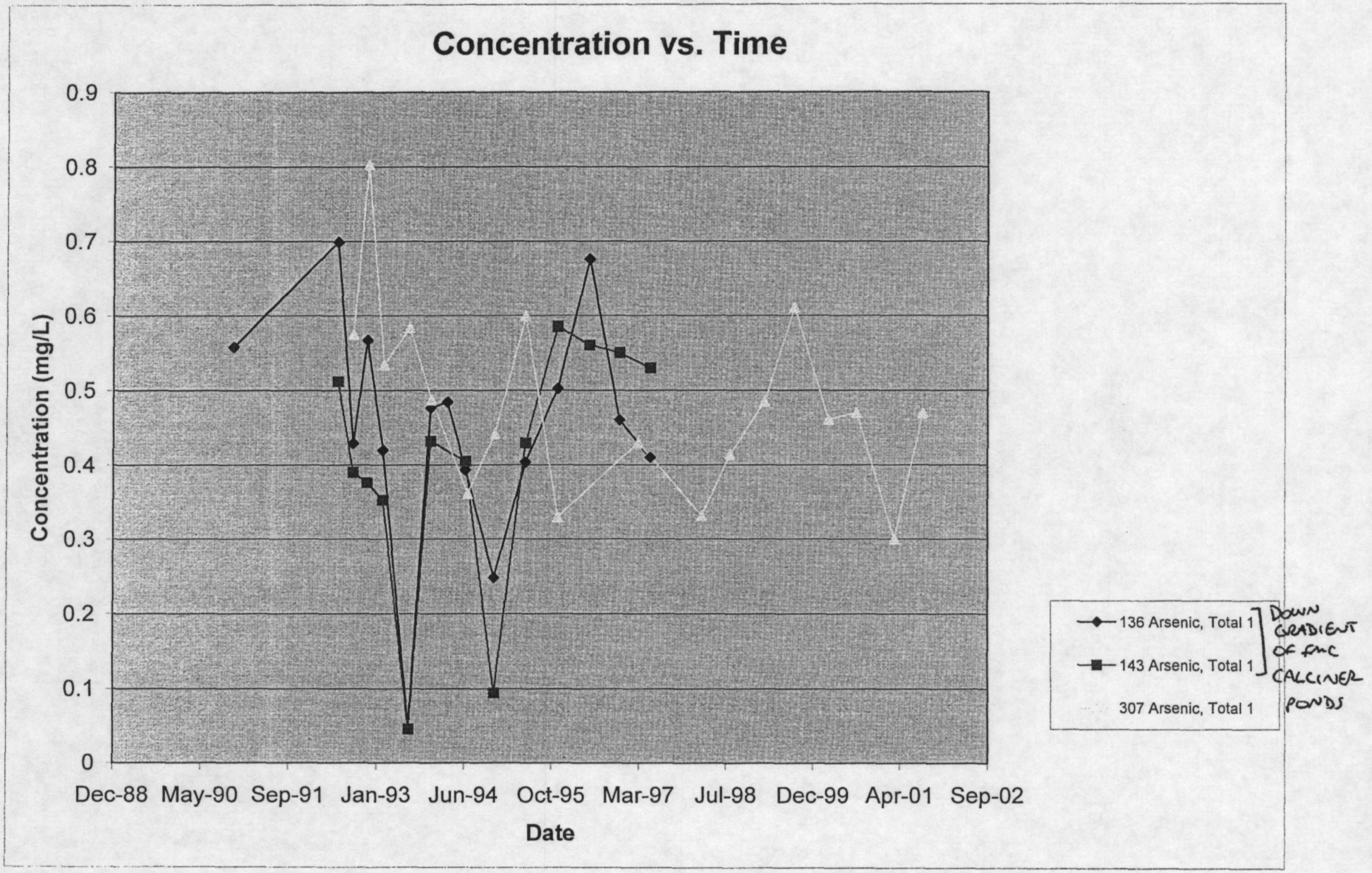
Overall, groundwater concentrations are similar from 1995 to 2001, with the exception of the area down gradient of the lower stack which was brought back into use in 1994. In the joint fenceline area, data indicate the effect of non-Simplot sources.

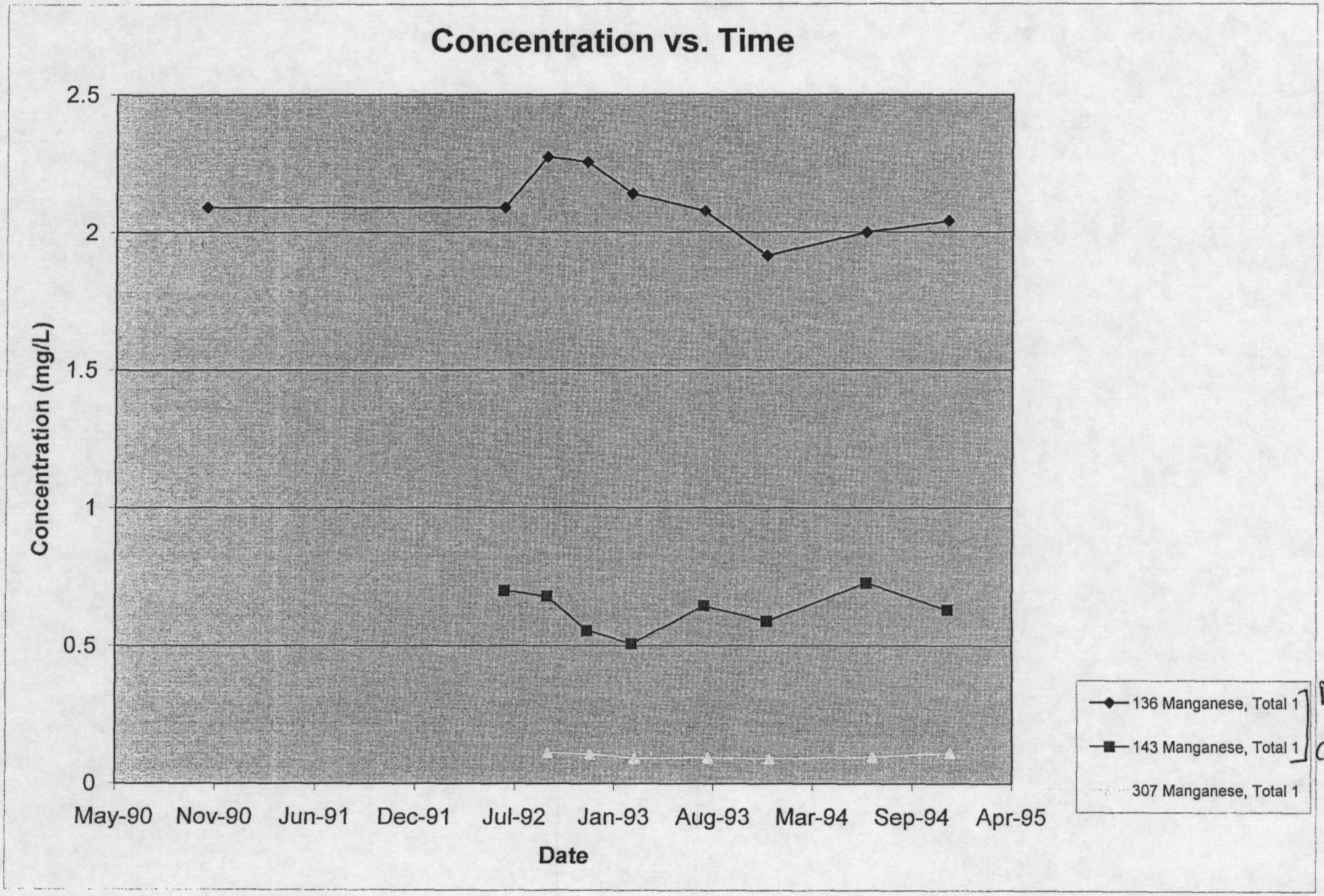
Figure 16
Arsenic Concentrations at Batiste Spring



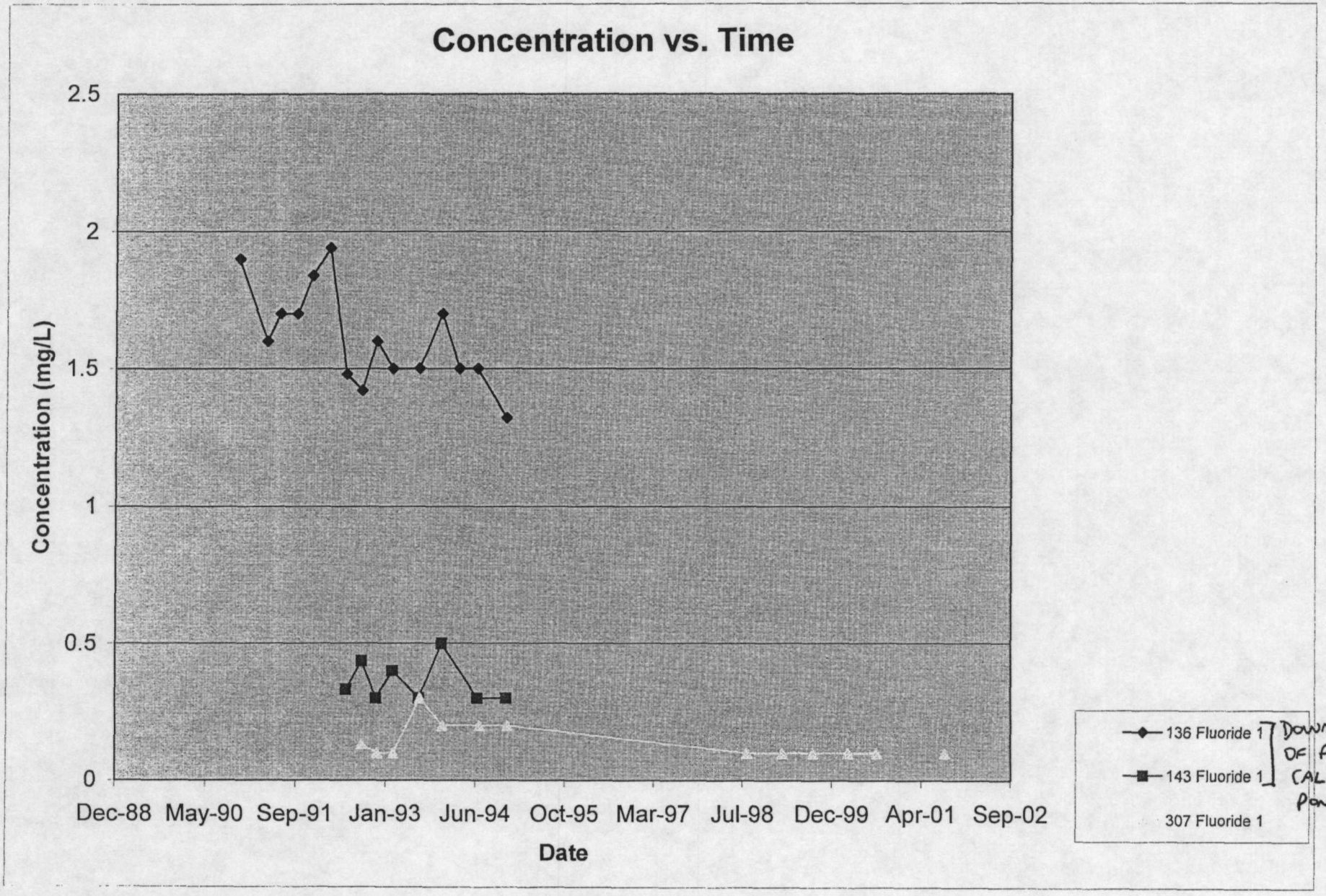
DOWNGRADIENT OF THE GYPSUM STACK - JOINT FENCELINE AREA



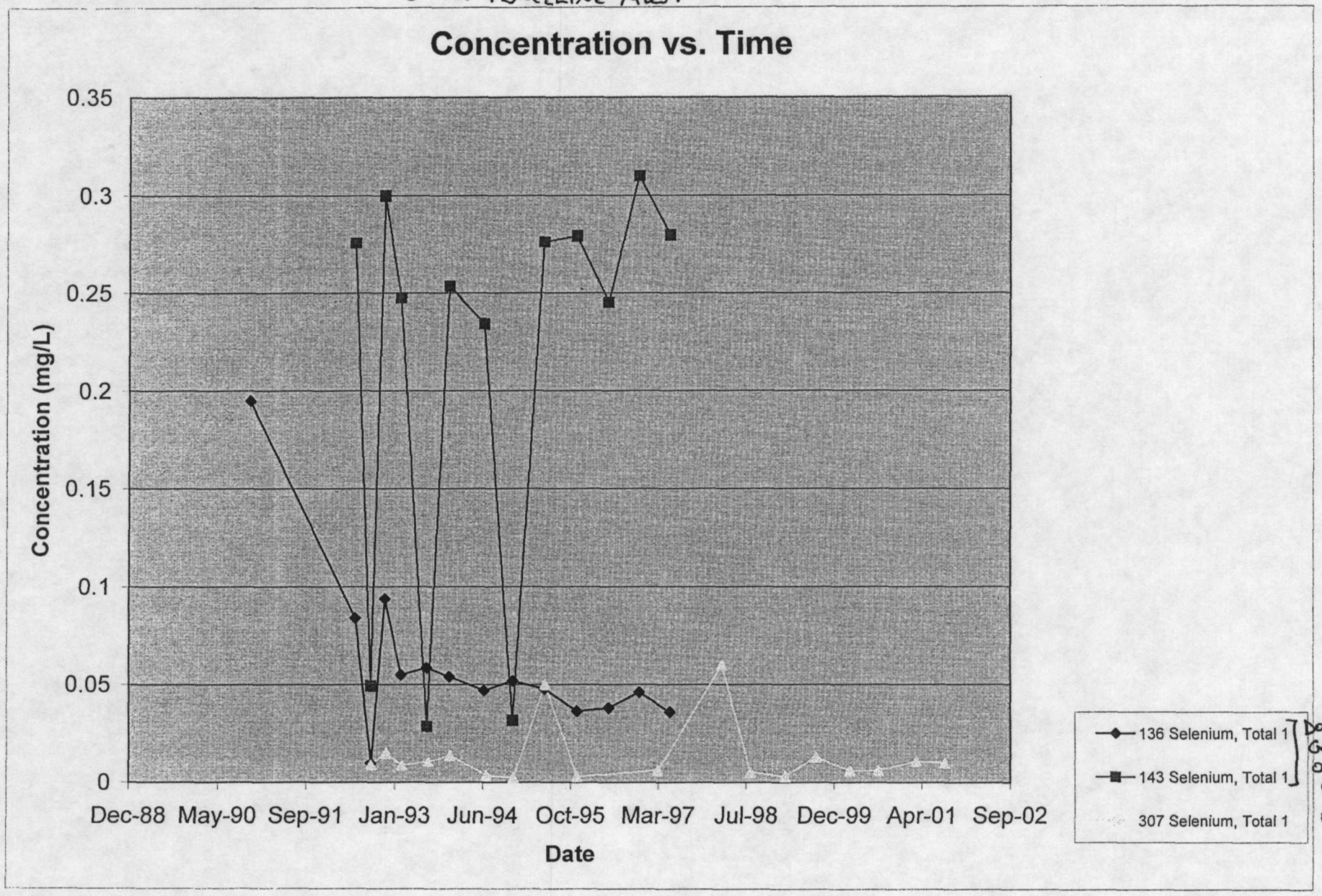

Concentration vs. Time
Concentration (mg/L)
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
Dec-88
May-90
Sep-91
Jan-93
Jun-94
Oct-95
Mar-97
Jul-98
Dec-99
Apr-01
Sep-02
Date
136 Arsenic, Total 1
143 Arsenic, Total 1
307 Arsenic, Total 1
DOWN GRADIENT OF FMC CALCINER PONDS


Concentration vs. Time
Concentration (mg/L)
2.5
2
1.5
1
0.5
0
May-90
Nov-90
Jun-91
Dec-91
Jul-92
Jan-93
Aug-93
Mar-94
Sep-94
Apr-95
Date
136 Manganese, Total 1
143 Manganese, Total 1
307 Manganese, Total 1
Downgrad of Enc Calcaire Ponds

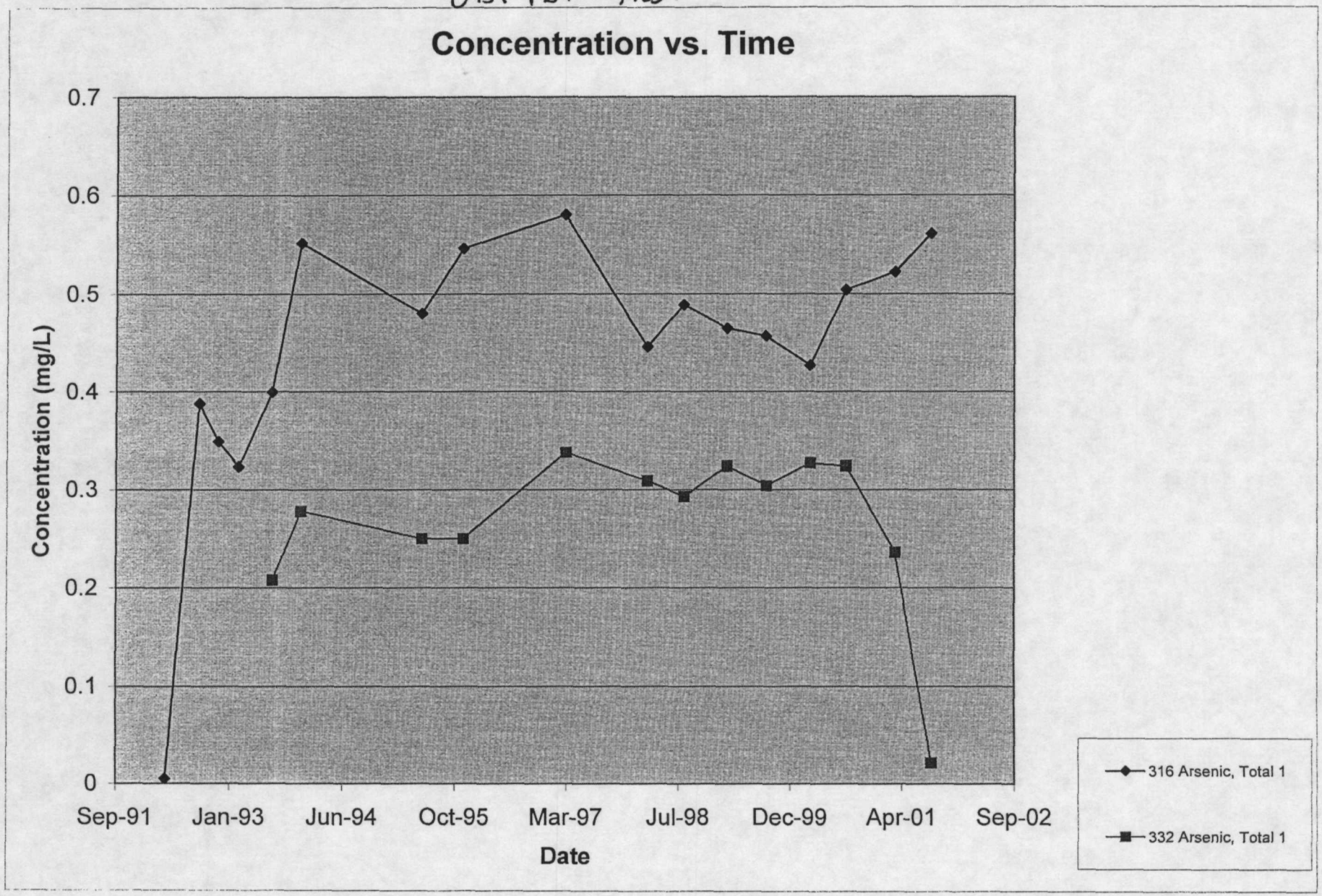
JOINT FENCELINE AREA



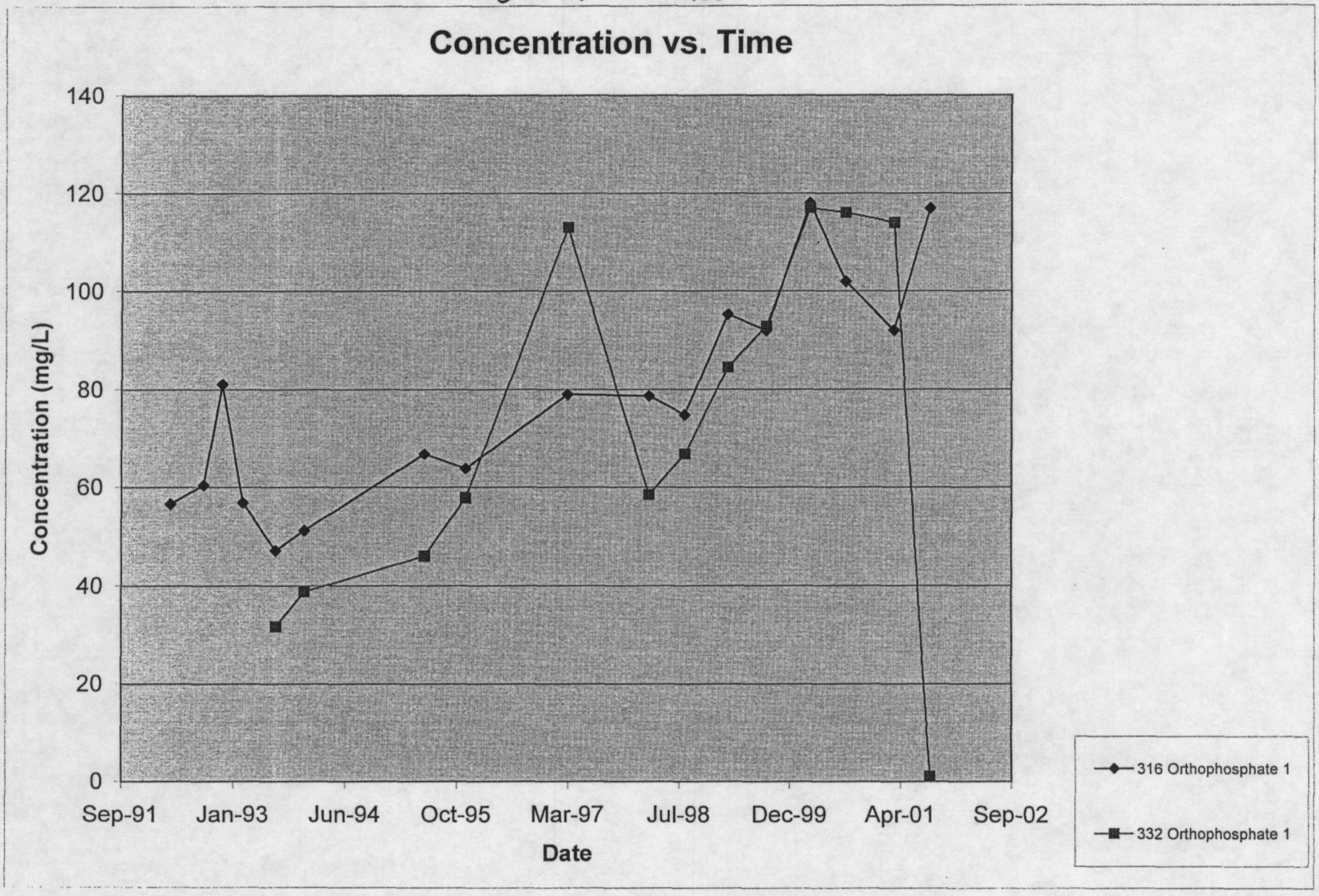
JOINT FENCELINE AREA



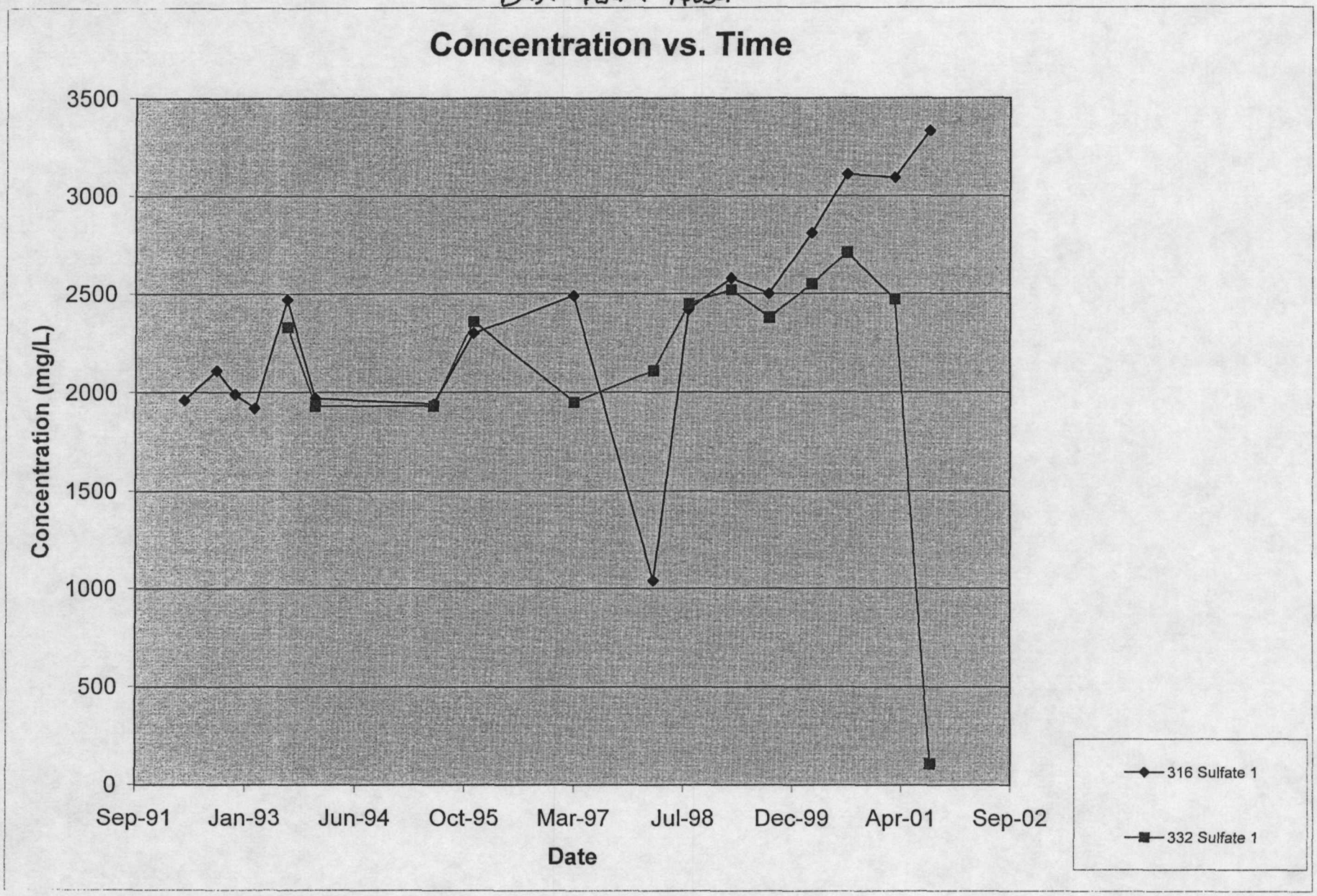
EAST PLANT AREA



EAST PLANT AREA



EAST PLANT AREA



Groundwater Extraction System Design

- Groundwater modeling was performed during the Feasibility Study (FS) to identify candidate extraction areas.

- The modeling effort indicated nearly all of the stack-affected groundwater could be intercepted by placing extraction wells in the western relect channel (Location "A"), on the eastern side upper zone near the toe of the lower gypsum stack (Location "B") and in the eastern side lower zone (Location "C") (see figure)

- Field studies and pilot tests were then performed to further evaluate the candidate extraction areas and see if the identified pumping scenarios would hold true under active pumping.

- Based on pumping results, the following well spacings and pumping rates were indicated for optimal groundwater capture:

  West Plant Area
  - Two wells within the relect channel pumping at a combined rate of 150 gpm.

  East Plant Area
  - For the upper zone, seven wells along the toe of the lower stack spaced 130 feet apart pumping at a combined rate of 280 gpm.
  - For the lower zone, two wells northwest of the upper zone wells spaced 400 feet apart pumping at a combined rate of 400 gpm.

TANKS

TANKS

TANKS

TANKS

PORTNEUF RIVER

W.L.
4526.6

W.L.
4557.3

410
(337)

411

407

408

409

406

405

404

403

402

401
(343)

LEGEND:

403 ▲ NEW EXTRACTION WELL

402 ● EXISTING EXTRACTION WELL

(346) PREVIOUS WELL DESIGNATION NUMBER

N

SCALE

500 0 500 FEET

SIMPLOT PLANT AREA
EASTERN MICHAUD FLATS
SUPERFUND SITE
POCATELLO, IDAHO

GROUNDWATER EXTRACTION REMEDIAL DESIGN REPORT

FIGURE 21

EXTRACTION WELL LOCATIONS

PROJECT: 010121.2	DATE: JULY 2002
REV:	BY: RHF CHECKED: AC

MFG, Inc.
consulting scientists and engineers

RFIELD D:\021\021-5.dwg 010121.2 6/11/02 5:17 pm
Xrefs: [none]
Images: [none]
Plot time: 5:17 pm
Plot date: 6/11/02

APPENDIX B.2

Dewatering Pit

Dewatering Pit

- *The remedial objective is to prevent incidental worker exposure to the solids in the Dewatering Pit by removing residual solids from the pit area.*

- *The performance standard will be removal of residual Dewatering Pit solids as verified through confirmatory soil sampling.*

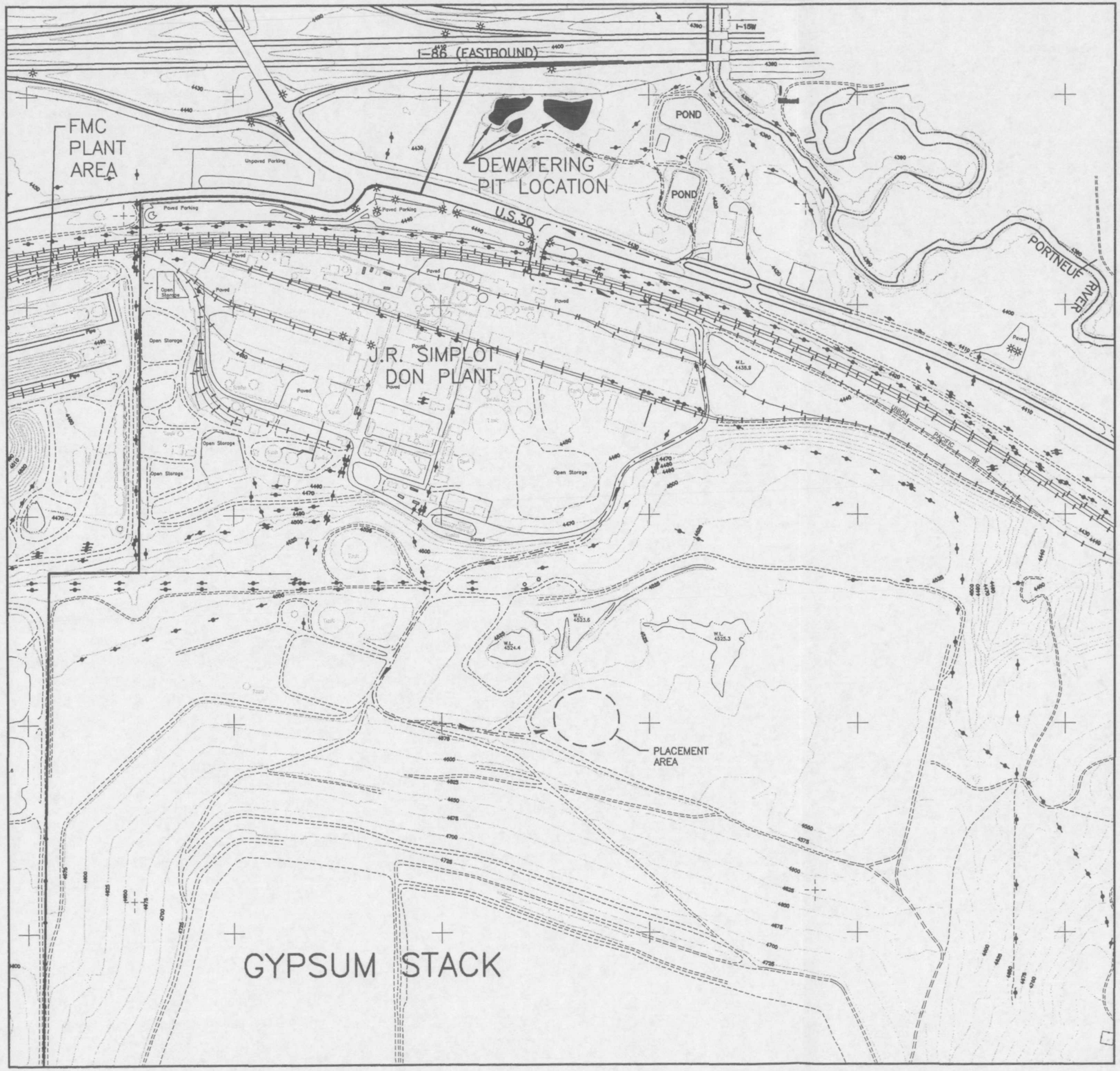
Characteristics

The Dewatering Pit was constructed and used briefly by Simplot during the period of start up for the ore slurry pipeline around 1991.

The Dewatering Pit consists of three bermed areas; with a total surface area of approximately 40,000 square feet. The volume of the residual solids to be removed is estimated at approximately 6,800 cubic yards. The berms are reportedly constructed of native soil and gravel that was excavated from the interior of the pits during construction and are typically in the range of 8 to 12 feet high.

The solids within these pits consists primarily of phosphate ore residuals and solids precipitated by pH adjustment of irrigation waters, which can be visually recognized by their gray color in contrast to the light brown-colored native soil.

During the RI, a single soil boring was drilled within the eastern pit. The material encountered in the upper 2.5 feet of this boring consisted of residual solids. The material encountered in the remainder of the boring consisted of sand (2.5 to 4 feet depth), and gravel (below 4 feet).



LEGEND:

- DEWATERING PIT
- HAUL ROUTE TO GYPSUM STACK PLACEMENT AREA
- PLACEMENT AREA

NOTES:

1. CONTRACTOR MUST COMPLY WITH ALL SIMPLOT TRAFFIC AND SAFETY RULES AND REGULATIONS WHEN TRAVELING THROUGH THE DON PLANT.
2. ALL HAUL TRAFFIC MUST BE CONFINED TO DESIGNATED HAUL ROUTES.
3. EXACT PLACEMENT AREA OR DUMPING SITE WILL BE DESIGNATED BY SIMPLOT OPERATIONS PERSONNEL.
4. CONTRACTOR SHALL PROVIDE TRAFFIC CONTROL AND/OR APPROPRIATE SIGNAGE, AS NECESSARY, AT ENTRANCE TO HIGHWAY 30.

N

SCALE
250 0 250 FEET

MFG
consulting scientists and engineers
4900 Pearl East Circle, Suite 300W,
Boulder, Colorado 80301
Phone (303) 447-1823
Fax (303) 447-1836

DISCLAIMER

THE INFORMATION PROVIDED ON THIS DRAWING WAS PRODUCED USING BOTH TECHNICAL INFORMATION AND KNOW HOW. ANY ADAPTATION OR MODIFICATION OF THE INFORMATION OR DRAWING SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY OR LEGAL EXPOSURE TO THE ENGINEER.

REFERENCE

- BECHTEL ENVIRONMENTAL, INC., DATE OF PHOTOGRAPHY: 21JUNE92 DATE OF MAPPING: AUGUST 92 MAPPING AND PHOTOGRAPHY BY WALKER AND ASSOCIATES, INC. SEATTLE, WASHINGTON. SEATTLE, WASHINGTON

NO.	REVISIONS	BY	DATE
0	ISSUE FOR REVIEW	DLL	05/02

DESIGNED BY:	DLL
DRAWN BY:	SCG
CHECKED BY:	ACK
APPROVED BY:	DLL
CTB:	MFG-STD
VIEW NAME:	PLAN
ORIGINATION DATE:	04/29/02
PLOT SCALE:	1:1 OR 1:2
DATE:	MAY 2001

EASTERN MICHAUD FLATS
POCATELLO, IDAHO
~~SIMPLOT PLANT AREA~~
DEWATERING PIT REMEDIAL ACTION

DEWATERING PIT SITE PLAN AND HAUL ROUTE

DRAWING NO. 0121C-102
REV.NO. 0
SHEET 2 OF 4

SCG 0121C-102.dwg D:\MCS\010121-4\ 010121.4 34x22 1=1 6/4/02 9:42 am
Xrefs: [none]
Images: [none]
Plot time: 9:43 am
Plot date: 6/4/02

Constituent	Background Levels (mg/kg) [1]	Sampling Depth (feet)				
		Surface	2.5	10	20	26
		Concentration (mg/kg)				
Arsenic	7.7	15	<3.3	<2.8	<2.3	<0.55
Beryllium	1.0	5.2	0.23	0.19	0.13	0.12
Cadmium	1.9	131	0.54	0.49	0.5	0.49
Chromium	27.5	2,710	16.3	30.9	31.1	8.9
Fluoride	600	30,000	710	550	320	140
Phosphorus	672	51,300	544	501	301	407
Zinc	52.8	3,610	35.8	37.2	24.8	25.3

Note:

1. Background constituent levels for site soils derived by EPA.

Human health risks for site workers associated with incidental ingestion of soils were estimated in EPA's risk assessment. Constituents of concern at the site are present at background levels that often represent risks that are within or above the acceptable risk range of 10^{-6} to 10^{-4}. Therefore, the risk assessment calculated incremental risks; risks associated with elevated constituent concentrations minus risks associated with background concentrations.

Estimated Human Health Risks for Simplot Maintenance Workers: for arsenic an incremental cancer risk of 1.3×10^{-6} and for beryllium an incremental cancer risk of 1.9×10^{-6}.

It should be noted that the risk assessment approach assumed that an individual worker performs activities in the Dewatering Pit area for 75 days per year for a period of 25 years. This area is not within the main plant area and in fact no work has been performed in or around the Dewatering Pit. The risk estimates are therefore highly conservative.

Remedial Design

Excavation of the residual solids will be performed using standard earthmoving equipment. Material will be excavated and loaded directly into haul trucks for transport to the gypsum stack. As the gypsum stack grows due to ongoing Don Plant operations, the Dewatering Pit solids will be covered by gypsum.

Excavation of the residual solids will be guided by visual observation. Excavation will proceed both horizontally and laterally until there is a visible change in the material type indicating the interface with native soil. After reaching these excavation limits, confirmation sampling will be performed. Solids removal will be confirmed by a zinc concentration of 360 mg/Kg of less.

Once excavation activities have been completed, the gravel and soil berms surrounding the pits will be used as backfill and the area will be regraded to establish a final grade consistent with the surrounding terrain, to promote positive drainage.

It is estimated that the remedial action will take approximately 2 to 3 weeks to complete.

Simplot is considering construction of a new lined pond in this area in the near future.

APPENDIX B.3

Gypsum Stack Roads

Gypsum Stack Roads

- *The remedial objective of this action is to reduce visible fugitive emissions generated by vehicular traffic on permanent roads located on the face of the gypsum stack.*

- *The performance standard is the successful implementation of the final design.*

Characteristics

Gypsum (hydrated calcium sulfate) is the primary byproduct from the phosphate ore processing operations conducted at the Simplot Don Plant. Approximately 6,000 tons (dry weight basis) of gypsum is produced daily and slurried to the gypsum stack.

The gypsum stack has three separate cells: the lower stack and the eastern and western cells of the upper stack.

The permanent gypsum stack roads, subject to the remedial action, are located on the north face of the gypsum stack, and are identified as the West Face Road and the East Face Road.

Human health risks associated with the inhalation pathway were estimated in EPA's risk assessment. For the Simplot Plant Area risks were estimated for current workers (maintenance workers and gypsum stack workers). Risks were also estimated for current residents and for hypothetical future residents living adjacent to the FMC and Simplot plants.

An emission inventory for Simplot and FMC sources was presented in Appendix AE of the RI Report. As shown, at the time of the RI constituents were emitted to the air from numerous sources at both the FMC and Simplot facilities.

For gypsum stack workers, total Incremental Cancer Risks (i.e., the estimated cancer risks in excess of background) were estimated at 6.0 E-6 for inhalation of the chemical carcinogens cadmium, hexavalent chromium and arsenic and 2.0 E-5 for inhalation of the radiological carcinogen polonium-210.

For residents Incremental Cancer Risks due to inhalation of chemical carcinogens were estimated from 7.22 E-7 to 2.24 E-6 (the background cancer risk was estimated at 1.5 E-6). Risk drivers were arsenic cadmium and hexavalent chromium. For radiological carcinogens, lead-210 and polonium-210 were the major risk drivers with estimated Incremental Cancer Risks ranging from 2.96 E-6 to 1.11 E-5 (background risks were estimated at 2.8 E-5).

Risks estimated above have been reduced due to the closure of the FMC facility in December 2001 and the resultant elimination of emission sources associated with operation.

RI Allocation of Constituent Emissions

Constituent	Percent Emitted from FMC	Percent Emitted from Simplot
Arsenic	91	9
Cadmium	95	5
Chromium	83	17
Lead-210	94	6
Polonium-210	99.93	0.07

The gypsum stack roads were identified as a relatively small source of constituents to air at the Simplot Don Plant. The RI emission inventory provides emission estimates for the entire gypsum stack operation (primarily roads and dike construction) and using these values will overestimate emissions from the roads alone.

RI Estimates of Constituent Emissions from the Gypsum Stack

Constituent	Percent of Total Emissions from FMC and Simplot
Arsenic	0.05
Cadmium	0.21
Chromium	0.24
Lead-210	0.07
Polonium-210	0.004

While detailed modeling would be required to estimate the contribution of any one source to total air concentrations at a particular location, these values provide summary information on the low overall magnitude of the contribution of gypsum stack emissions to site-related risks associated with the air inhalation pathway.

Remedial Design

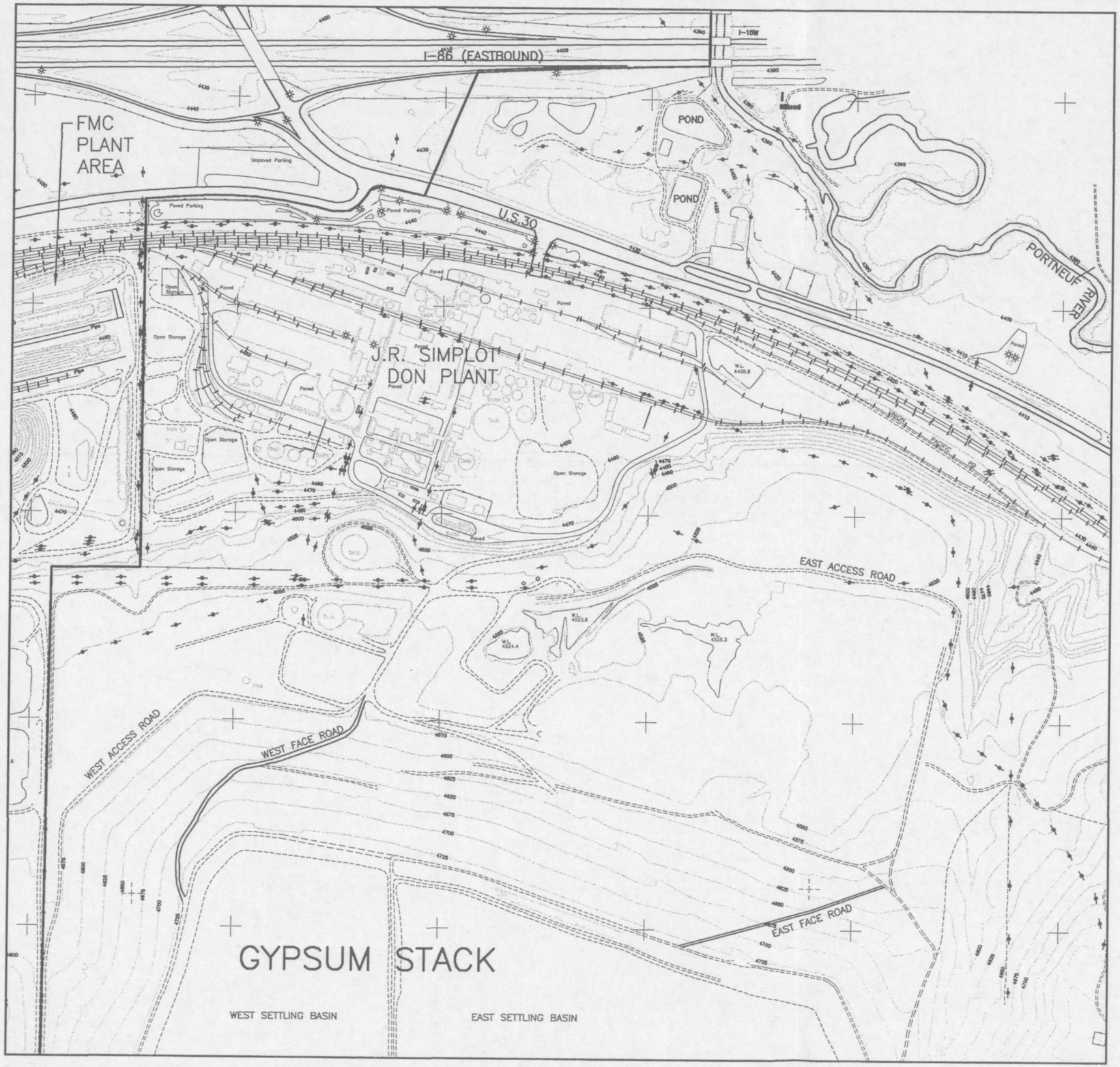
Simplot is proposing to place gravel road base on the permanent roads on the face of the gypsum stack.

Don Plant operations personnel have reported that tests have been performed in the past using dust control additives such as magnesium chloride. The results of these informal tests indicate that such application does not result in lasting dust control under the routine traffic conditions on these gypsum roads.

Another option considered to address fugitive dust emissions was the routine watering of the roads. This alternative would be less effective and more costly than placement of a gravel road.

To provide a barrier between the gypsum and the gravel road base a geotextile fabric will be used to prevent the migration of fines and prevent the gravel from being packed down into the gypsum.

It is estimated that the remedial action will take approximately 2 to 3 weeks to complete.



LEGEND:

PERMANANT ROADS ON GYPSUM STACK FACE

NOTES:

1. CONTRACTOR MUST COMPLY WITH ALL SIMPLOT TRAFFIC AND SAFETY RULES AND REGULATIONS WHEN TRAVELING THROUGH THE DON PLANT.
2. ALL HAUL TRAFFIC MUST BE CONFINED TO DESIGNATED HAUL ROUTES.
3. GRADE WEST FACE ROAD AND EAST FACE ROAD. INSTALL NON-WOVEN GEOTEXTILE AND PLACE SIX INCHES OF GRAVEL ROAD BASE.

N

SCALE
250 0 250 FEET

M F G
consulting scientists and engineers
4900 Pearl East Circle, Suite 300W,
Boulder, Colorado 80301
Phone (303) 447-1823
Fax (303) 447-1836

REFERENCE

- BECHTEL ENVIRONMENTAL, INC., DATE OF PHOTOGRAPHY: 21JUNE92 DATE OF MAPPING: AUGUST 92 MAPPING AND PHOTOGRAPHY BY WALKER AND ASSOCIATES, INC. SEATTLE, WASHINGTON. SEATTLE, WASHINGTON

NO.	REVISIONS	BY	DATE
0	ISSUE FOR REVIEW	DLL	05/02

DESIGNED BY:	DLL
DRAWN BY:	SCG
CHECKED BY:	ACK
APPROVED BY:	DLL
CTB:	MFG-STD
VIEW NAME:	PLAN
ORIGINATION DATE:	04/29/02
PLOT SCALE:	1:1 OR 1:2
DATE:	MAY 2001

EASTERN MICHAUD FLATS
POCATELLO, IDAHO
SIMPLOT PLANT AREA
GYPSUM STACK ROADS RA

GYPSUM STACK ROADS SITE PLAN

DRAWING NO. 0121C-111
REV.NO. 0
SHEET 2 OF 3

RFIELD D:\ACS\010121-3\0121C-111.dwg 010121.4 6/13/02 10:46 am
Xrefs: [none]
Images: [none]
Plot time: 10:47 am
Plot date: 6/13/02

APPENDIX B.4

Former East Overflow Pond

Former East Overflow Pond

Remedial actions to excavate gypsum sediments from the area of the Former East Overflow Pond and construction of a new, lined impoundment were a required work element under the Consent Decree Statement of Work (SOW). As described in the SOW, the objective of the actions was *"to reduce the potential for infiltration through potential source materials"*.

In addition, the SOW states that the *'performance of this element of the work will be evaluated by monitoring groundwater for the contaminants of concern at upgradient and down gradient locations."*

Remediation

Remedial actions were implemented at the Former East Overflow Pond in the second half of 1997.

The work activities consisted of excavating sediments from the bottom of the Former East Overflow Pond and over-excavating the underlying material to create the foundation for a new, lined impoundment.

The excavated materials were relocated to the gypsum stack and confirmatory sampling was performed to verify that the sediments had been removed prior to impoundment construction.

Once these actions were completed, fill material was imported from an on-site borrow area, compacted and shaped to form the base for the lined impoundment. A double-lined impoundment with a leak detection system was then constructed on the prepared subgrade.

Groundwater Monitoring

Groundwater monitoring will be performed quarterly at locations upgradient and down gradient of the Former East Overflow Pond to evaluate the performance of the remedial actions.

Because constituent concentrations in groundwater underlying the Former East Overflow Pond are expected to change in response to the start-up of the groundwater extraction system, data from the extraction start-up phase will not be used in evaluating performance.

Following the start-up period, constituent concentrations in groundwater immediately down gradient of the pond will be compared with constituent concentrations immediately upgradient of the pond using an analysis of variance method (in particular, the one-way parametric analysis of variance).

If the data demonstrate that the pond has had no effect on groundwater quality, the performance standard for the remedial actions will be met and the monitoring will be discontinued.

If the performance standard is not met, a Corrective Action Plan will be prepared and submitted by Simplot, which will provide details of any corrective actions proposed for the pond and on-going monitoring. The Corrective Action Plan will be implemented on approval by EPA.

APPENDIX B.5

Institutional Controls – Gamma Radiation Monitoring/Mitigation for Gypsum Stack Workers

Institutional Controls - Gamma Radiation Monitoring/Mitigation for Gypsum Stack Workers

The remedy selected in the ROD for the Simplot Plant Area contained the following for gypsum stack workers:

Simplot shall implement a program requiring gypsum stack workers to wear radiation-measuring devices which would allow for characterization of actual exposure and reduction of uncertainties associated with this pathway. If an unacceptable level of exposure is measured for any worker, job rotation of this worker, or other protective measures, shall be initiated. If exposure levels are shown to be consistently below 1 x 10^{-4} risk based level for the first few years, the monitoring may be discontinued upon EPA approval.

The Consent Decree Statement of Work (SOW) contains the following ROD cleanup objective:

Prevent external exposure to radionuclides in soils that pose estimated excess cancer risks greater than $1x10^{-4}$ or Site-specific background levels where that is not practicable.

Supporting Information

The phosphate ore used at the Don Plant contains naturally occurring radionuclides. Gypsum, which is the main byproduct of the extraction of phosphate materials from the ore, retains some of those radionuclides, such that radiation levels are elevated with respect to unaffected soils in the EMF area.

There are three workers employed full-time in dike maintenance on the gypsum stack: two backhoe operators and one bulldozer operator.

Radiation Levels/Risk Estimates

The Baseline Risk Assessment estimated worker exposures based on gamma radiation measurements made during the aerial radiological survey of the Pocatello area performed by EG&G on behalf of EPA in June and July 1986.

Based on measurements from this study, the average gamma radiation level was estimated to be 38.7 μR/hr on the gypsum stack. The background exposure rate in the Pocatello area was estimated to be 12.6 μR/hr. Using these average gamma levels, incremental doses and risks to workers were estimated in the Baseline Risk Assessment based on a series of assumptions regarding exposure duration, worker behavior and shielding effects of equipment.

The Baseline Risk Assessment estimated the incremental lifetime cancer risk to be 5.0E-4 for gypsum stack workers with a background risk of 2.44E-4. By contrast, the estimated background cancer risk to residents in the area due to external radiation from soils and cosmic radiation was estimated in the Baseline Risk Assessment at about 1.8E-3, based on the 1986 aerial radiological survey of the Pocatello and EPA's standard default residential exposures.

In 1994, Simplot and FMC conducted a ground survey of gamma exposure (presented in Appendix O of the RI Report). Results of the ground survey, assuming no shielding, were 18.5 μR/hr (average exposure) for a gypsum stack worker, with a background rates, measured to the north of the Don Plant, estimated between 12.6 and 15.8 μR/hr (measured to the north of the Don Plant), and between 21 and 42 μR/hr (measured in the hills adjacent to the gypsum stack). The average exposure rate for the gypsum stack workers measured in the ground survey was approximately 50% of the 38.7 μR/hr estimated in the Baseline Risk Assessment.

In 1997/1998 Simplot performed an additional exposure study over a three month period to support remedial design. Key findings were as follows:

- Average gamma radiation dose rate on the stack (estimated from six dosimeters placed around the dikes of the upper stack) was measured at 29.9 μR/hr.
- Average gamma radiation exposure for the gypsum stack workers was estimated at 21.2 μR/hr.
- The study found that the workers spent an average of 28 hours per week on the stack.

Proposed Remedial Action Approach

Perform a monitoring program to measure actual gamma radiation levels and worker exposure levels on the stack over a three month period. Also map gamma radiation levels in background areas.

If reduction of exposure is determined to be required, based on the remedial objectives, Simplot will provide a work plan for testing of possible shielding, or other mitigation methods, that may be required. If shielding is determine to be a potential option, it is likely that tests will be performed on stationary vehicles using steel plates to identify options to mitigate exposures to the vehicle operators.

The work plan will also provide details of the testing and implementation schedule and details of on-going personnel monitoring to evaluate the effectiveness of the mitigation measures.

APPENDIX B.6

Groundwater Monitoring

Groundwater Monitoring

As described in the SOW the objective of groundwater monitoring is:

"to collect sufficient data of adequate quality to evaluate the performance of the extraction system and other source control measures in reducing the extent and concentration of arsenic and other contaminants of concern [COCs] *in groundwater in the Plant Area and in preventing migration of arsenic and other COCs into the Area at concentrations above MCLs* [Maximum Contaminant Levels] *or RBCs* [Risk-Based Concentrations]. *Where there is an MCL, the MCL shall control. Specifically, components of the monitoring program will provide data to document the effectiveness of the extraction system in capturing seepage from the gypsum stack, to track water quality in areas potentially affected by sources other than gypsum stack seepage, and to confirm the attainment of performance standards and the long-term effectiveness of the remedy."*

The performance standards for groundwater monitoring set out in the SOW are as follows:

- *Groundwater samples will be collected from wells on a quarterly basis for a period of five years and the samples analyzed for arsenic and other site related constituents. The specific wells to be monitored, the analytes, and the data evaluation procedures will be provided in the draft Groundwater Monitoring RDR.*

- *After the five-year period, the monitoring locations and frequency will be evaluated and monitoring will continue on at least a semiannual basis.*

- *Monitoring of Batiste Spring and other locations in the Area will be initiated on a quarterly basis at the time of system startup. After successful demonstration of compliance with the performance standard* [for the extraction system], *as described in Section III.D.4.b, samples will be collected semi-annually. The data evaluation procedures will be provided in the draft Groundwater Monitoring RDR.*

TABLE 2
Monitoring Parameters

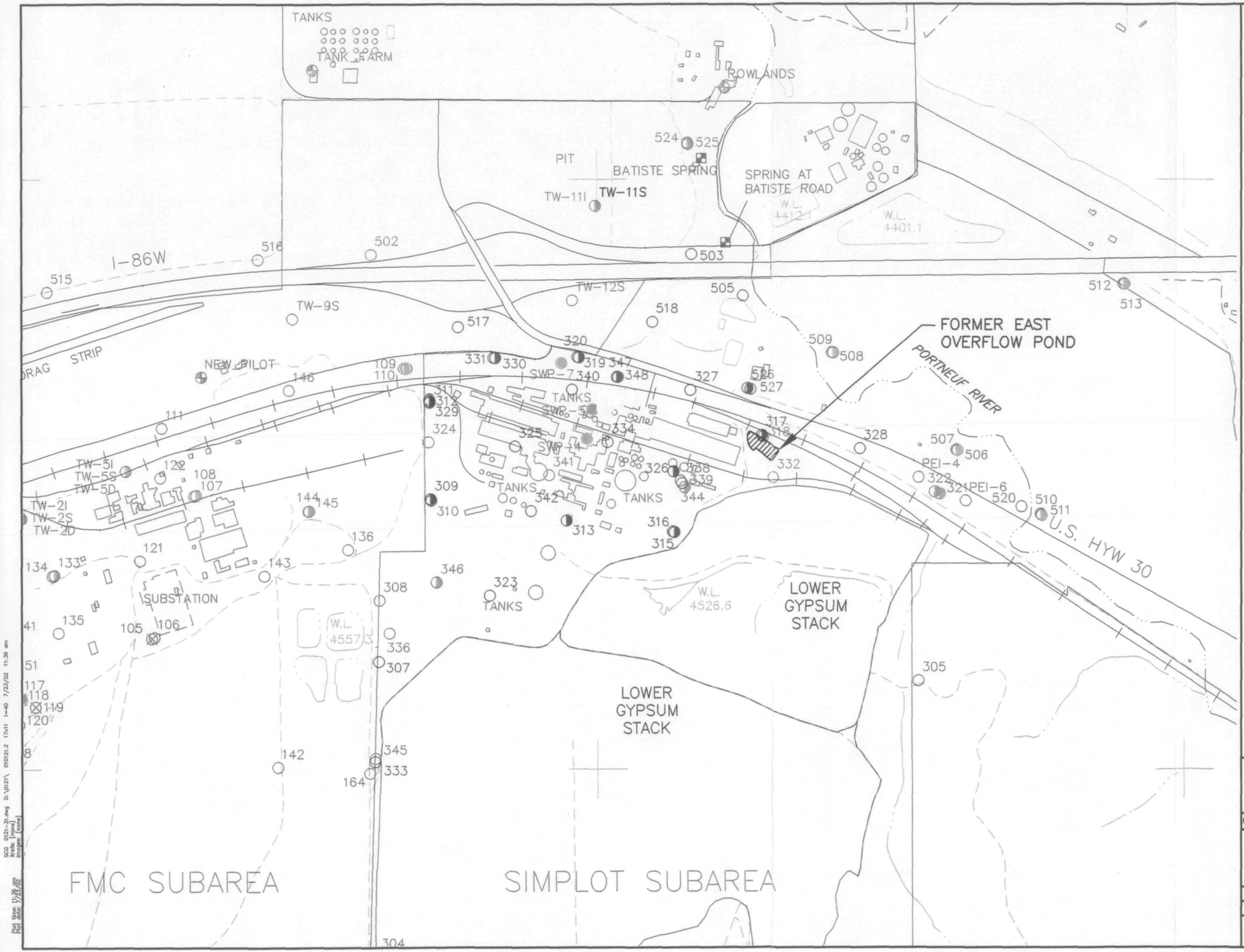
Parameter	Analytical Method[1]	Practical Quantitation Limit (PQL)
Field Measurements		
pH	pH meter/electrometric	±0.1 pH unit
Specific Conductance	Conductivity meter	5 μmho/cm
Dissolved Oxygen	D.O. meter	0.1 mg/L
Turbidity	Nephelometer	0.1 NTU
Temperature	Thermometer	±0.1°C
Laboratory Analyses		
Total dissolved solids	EPA 160.1	10 mg/L
Total alkalinity	EPA 310.1	10 mg/L
Sulfate	EPA 375.2	2.5 mg/L
Orthophosphate	EPA 365.1	0.1 mg/L
Chloride	EPA 325.1	2.5 mg/L
Calcium	EPA 200.7	0.5 mg/L
Magnesium	EPA 200.7	0.5 mg/L
Potassium	EPA 200.7	1.0 mg/L
Sodium	EPA 200.7	1.0 mg/L
Hardness	Standard Method 314A (calculation)	5 mg/L
Arsenic	EPA 200.8 or 206.3	0.005 mg/L
Selenium	EPA 200.8 or 270.3	0.002 mg/L

[1] Method numbers refer to EPA Methods for Chemical Analysis of Water and Wastes (EPA, 1983).

Table 3
Summary of Groundwater Monitoring Locations and Sampling Frequency

Monitoring Objective	Requirement	Sampling Frequency	Monitoring Locations
Demonstrate Performance of Simplot Groundwater Remedy	Performance Standard	Extraction System Startup Phase and Year After: Quarterly Subsequently: Monthly After compliance with performance standard is met: Semi-annually	Batiste Spring (POC) Spring at Batiste Road (POC)
Demonstrate Performance of Former East Overflow Pond Closure and Replacement	Performance Standard	Quarterly	332 318
Track Groundwater Quality Improvements Down Gradient of Extraction System	SOW	Quarterly/ Semi-annually[1]	310 312 319 320 330 331 339 347 348 526 527
Identify Other Potential Sources of Constituents to Groundwater	---	Semi-annually/Annually[1]	307 309 313 315 316 317 323 325 326 327 328 329 332 333 334 340 342 503 505 517 518

Notes: 1 The sampling frequency may be reduced based on the findings of the five-year data review.



LEGEND:

- SHALLOW MONITORING WELL
- DEEP MONITORING WELL
- REPLACEMENT WATER SUPPLY WELL
- PRODUCTION WELL
- SPRING
- SPRING MONITORING LOCATIONS (POCs)
- PLANT AREA GROUNDWATER MONITORING LOCATIONS
- OTHER POTENTIAL SOURCE MONITORING LOCATIONS
- FORMER EAST OVERFLOW POND MONITORING LOCATIONS
- EXTRACTION WELL

N

SCALE

800 0 800 FEET

SIMPLOT PLANT AREA
EASTERN MICHAUD FLATS
SUPERFUND SITE
POCATELLO, IDAHO

GROUNDWATER MONITORING REMEDIAL DESIGN REPORT

FIGURE 8

SIMPLOT PLANT AREA GROUNDWATER MONITORING NETWORK

PROJECT: 010121.2	DATE: JULY 2002
REV:	BY: RHF CHECKED: AC

MFG, Inc.
consulting scientists and engineers

SCG 0121-31.dwg D:\0121\ 010121.2 17x11 1=40 7/23/02 11:36 am
Xrefs: [none]
Images: [none]
Plot time: 11:36 am
Plot date: 7/23/02

MFG OFFICE LOCATIONS

CALIFORNIA
Arcata
Irvine
San Francisco

COLORADO
Boulder
Fort Collins

IDAHO
Osburn

MONTANA
Missoula

NEW JERSEY
Edison

OREGON
Portland

PENNSYLVANIA
Pittsburgh

TEXAS
Austin
Fort Worth
Houston
Port Lavaca
Texarkana

WASHINGTON
Seattle

CORPORATE HEADQUARTERS

MFG, Inc.
4900 Pearl East Circle
Suite 300W
Boulder, Colorado 80301-6118
303/447-1823
303/447-1836/FAX
www.mfgenv.com